BLM

United States Department of the Interior
Bureau of Land Management

MODIFIED BLYTHE SOLAR POWER PROJECT

Proposed Amendment to Right-of-Way Grant CACA 048811

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Volume 1 of 2

February 2014

CACA 048811

Publication Index #: BLM/CA/PL-2014/010+1793

United States Department of the Interior

Bureau of Land Management

Draft EIS for the Modified Blythe Solar Power Project

Proposed Amendment to Right-of-Way Grant CACA 048811

For the

Palm Springs – South Coast Field Office

Palm Springs, California

February 2014

CACA-048811

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In Reply Refer To:
2800 (P)
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CACA-48811

Dear Reader:

Enclosed for your review is the Draft Environmental Impact Statement (Draft EIS) considering proposed amendments to the previously approved Blythe Solar Power Project (BSPP) right-of-way (ROW) grant. The BSPP received a ROW grant in 2010 to construct a 1,000-megawatt (MW) solar energy generating plant utilizing thermal parabolic trough technology on 6,831 acres of public land located near the City of Blythe in Riverside County, California (Approved Project). The current owner and holder of the BSPP right-of-way (ROW) grant (CACA-048811) has relinquished a portion of the original ROW and is requesting a variance from the existing approval to amend the grant to convert the BSPP to photovoltaic technology, reduce the size of the solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for two projects proposed to the north (Modified Project). The pending decision on the BSPP is whether to approve, approve with modifications, or deny issuance of a modified ROW grant.

This Draft EIS has been developed in accordance with the National Environmental Policy Act (NEPA), which requires federal agencies to take a hard look at the potential environmental consequences of their proposed actions/authorizations. This Draft EIS fully analyzes the Grant Holder's proposal to construct, operate, maintain, and decommission a Modified Project (Alternative 1) as well as the BLM's denial of the variance request, which would maintain the current ROW grant approvals on the site within the approximately 4,433-acre area now currently controlled by the Grant Holder (Alternative 2; No Action). Further, as part of the Draft EIS, Alternatives 1 and 2 are compared to the Approved Project and the No Project alternatives from the approved BSPP Proposed Plan Amendment/Final EIS (2010 PA/FEIS). This comparison is provided for informational purposes; neither the Approved Project nor the No Project alternative analyzed in the 2010 PA/FEIS is among the possible decisions the BLM is considering in this Draft EIS.

The BLM encourages the public to provide information and comments pertaining to the analysis presented in the Draft EIS. We are particularly interested in feedback concerning the adequacy and accuracy of the analysis of the proposed modification, the proposed alternatives and analysis of their effects, and any new information that would help the BLM as it considers this amendment. In development of the Final EIS, which is the next phase of the planning process, the decision maker may select various components from each of the alternatives analyzed in the

Draft EIS for the purpose of creating a project that best meets the purpose and need for this EIS and the BLM's management goals. As a member of the public, your timely comments on the Draft EIS will help formulate the Final EIS. Comments will be accepted for forty-five (45) calendar days following the U.S. Environmental Protection Agency's publication of its Notice of Availability (NOA) in the Federal Register. The BLM can best utilize your comments and resource information submissions if received within the review period.

Comments may be sent to Frank McMenimen, Project Manager, by mail: 1201 Bird Center Drive, Palm Springs, CA 92262; phone: (760) 833-7150; or email: CAPSSolarBlythe@blm.gov. One or more public meetings will be held during the comment period to provide clarification of the BSPP Modified Project and alternatives, describe the impacts and mitigation measures, and accept written public comments. Please see BLM's web page for information about the location, date, and time of these meetings:
http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Blythe_Solar_Power_Project.html
All substantive issues raised during the comment period will be considered and responded to, and modifications based on these comments may be made in the Final EIS.

Your review and comments on the content of the Draft EIS are critical to the success of this effort. If you wish to submit comments on the Draft EIS, we request that you make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number. Comments containing only opinion or preferences will be considered and included as part of the decision making process, but will not receive a formal response from the BLM.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment - including your personal identifying information - may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Additional hard copies or CD-ROM versions of the Draft EIS may be obtained by contacting the Palm Springs-South Coast Field Office. The document also will be available on the Internet at:
http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Blythe_Solar_Power_Project.html

We are pleased to provide the Modified Blythe Solar Power Project Draft EIS for your review and extend our appreciation for your cooperation and assistance during this process. We look forward to your continued participation.

Sincerely,

John R. Kalish
Field Manager

Palm Springs South Coast Field Office
Modified Blythe Solar Power Project
Draft Environmental Impact Statement

Bureau of Land Management (BLM)
Palm Springs / South Coast Field Office (PSSCFO)
1201 Bird Center Drive, Palm Springs, CA 92262

Abstract

This Draft Environmental Impact Statement (Draft EIS) was prepared considering proposed amendments to the previously approved Blythe Solar Power Project (BSPP) right-of-way (ROW) grant. The BSPP received a ROW grant in 2010 to construct a 1,000-megawatt (MW) solar energy generating plant utilizing thermal parabolic trough technology on 6,831 acres of public land located near the City of Blythe in Riverside County, California (Approved Project). The current owner and holder of the BSPP right-of-way (ROW) grant (CACA-048811) has relinquished a portion of the original ROW and is requesting a variance from the existing approval to amend the grant to convert the BSPP to photovoltaic technology, reduce the size of the solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for two projects proposed to the north (Modified Project). The pending decision on the BSPP is whether to approve, approve with modifications, or deny issuance of a modified ROW grant.

This Draft EIS fully analyzes the Grant Holder's proposal to construct, operate, maintain, and decommission the Modified Project (Alternative 1) as well as the BLM's denial of the variance request which would maintain the current ROW grant approvals on the site within the approximately 4,433-acre area now currently controlled by the Grant Holder (Alternative 2). Further, as part of the Draft EIS, Alternatives 1 and 2 are compared to the Approved Project and the No Project/No Action alternatives from the BSPP Plan Amendment/Final EIS (PA/FEIS). The Agency Preferred Alternative is to approve the Modified Project (Alternative 1).

Chapter 2 discusses the Modified Project and the alternatives described above. Chapter 3 describes the existing conditions on and in the vicinity of the project area and the potential environmental impacts expected under the Modified Project and alternatives. Chapter 4 describes consultation and coordination with federal, state, local, and non-governmental organizations that has been conducted for the Draft EIS. The BLM has tiered the analysis in this Draft EIS on the PA/FEIS and Record of Decision (ROD) for the Approved Project to the extent that these documents inform the BLM's consideration of the effects of the Grant Holder's proposed conversion of the Approved Project to a different solar technology and associated reduction in size and reconfiguration of the overall project. The PA/FEIS and ROD are included as appendices to this Draft EIS.

The Field Manager of the Palm Springs South Coast Field Office has the authority for site management of future activities related to the ROW grant and is the BLM Authorized Officer for this Draft EIS.

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EXECUTIVE SUMMARY

ES.1 Introduction

The California Desert District, Palm Springs-South Coast Field Office (PSSCFO), of the Bureau of Land Management (BLM) has prepared this Draft Environmental Impact Statement (Draft EIS) in response to a Level 3 variance request submitted to the BLM related to the previously approved Blythe Solar Power Project (BSPP). On November 4, 2010, the BLM issued a right-of-way (ROW) grant for the BSPP (CACA-048811), which authorized a 1,000-megawatt (MW) solar energy generating plant utilizing thermal parabolic trough technology on 6,831 acres of public land located near the community of Blythe in Riverside County, California (Approved Project). NextEra Blythe Solar Energy Center, LLC (NextEra Blythe Solar or Grant Holder), the current owner and holder of the BSPP ROW grant, is requesting convert the Approved Project to photovoltaic (PV) technology, reduce the size of the solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for shared use with other approved and proposed projects (Modified Project). These modifications would require an amendment to the ROW grant.

ES.2 Background

The initial project proponent and applicant for the BSPP, Palo Verde Solar I, LLC, commenced construction following the November 4, 2010 receipt of the ROW grant and formal Notice to Proceed from the BLM. Palo Verde Solar I, LLC installed fencing and drainage infrastructure, and constructed a water well, well-related infrastructure, and an approximately 21,000-foot (4-mile) segment of the main access road to the solar plant site. The 2010 ROW grant authorization is for a 1,000 MW thermal trough project that was described and analyzed in the August 2010 Plan Amendment/Final EIS (2010 PA/FEIS) included as Appendix A of this Draft EIS and authorized in the October 2010 Record of Decision (2010 ROD) included as Appendix B of this Draft EIS. Construction activities ceased on August 23, 2011, following Palo Verde Solar I's indication to the BLM that it planned to amend the existing authorizations for the Approved Project to allow the development of solar PV energy generation technology on the site. Upon this request, the BLM issued a Temporary Suspension Order for all surface disturbing activities.

Beginning in December of 2011, Palo Verde Solar I's parent companies both in the United States and Europe filed for bankruptcy. First, Solar Millennium initiated the equivalent of bankruptcy proceedings in Germany, and in April 2012, Solar Trust of America filed for Chapter 11 bankruptcy protection in Delaware (Stetch, 2012). As part of that bankruptcy proceeding in

Delaware, NextEra Blythe Solar, a subsidiary of NextEra Energy Resources, LLC, purchased the un-built assets of the Approved Project on July 12, 2012. The BLM approved the transfer of the ROW grant/lease in connection with that transaction and NextEra Blythe Solar became the current Grant Holder. The Grant Holder proceeded with plans to convert the previously-approved solar thermal project to a PV project on the approved site and requested on September 5, 2012 that theBLM lift the Temporary Suspension Order. The BLM granted this request on October 16, 2012, and the Grant Holder began to maintain the site in accordance with the existing ROW grant and other approvals. Additionally, the Grant Holder anticipated that a PV project on the site would require a smaller footprint than the approved solar thermal trough project, and relinquished to the BLM approximately 35 percent of the approved ROW grant area on March 7, 2013. The BLM approved this relinquishment on May 9, 2013.The Grant Holder submitted a Plan of Development Supplement (POD Supplement) and Level 3 variance request to the BLM on March 18, 2013, which requested that the BLM modify the Approved Project ROW grant to convert the Approved Project to PV technology, reduce the size of the solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for shared use with other approved and proposed projects (i.e., approve the Modified Project).

ES.3 Purpose and Need

Taking into account the BLM's multiple use mandate, the BLM's purpose and need in connection with the Modified Project is to respond to the Grant Holder's request for a Level 3 variance under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA; 43 U.S.C. §1701 et seq.) and modification of the existing ROW grant to include the construction, operation, maintenance and decommissioning of a 485 MW solar PV project in compliance with FLPMA, BLM ROW regulations, and other applicable federal laws.

In conjunction with FLPMA, BLM authorities include:

1. 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;"

2. Secretarial Order 3285A1, dated March 11, 2009, and amended on February 22, 2010, which "establishes the development of renewable energy as a priority for the Department of the Interior;" and

3. The President's Climate Action Plan, released on June 25, 2013, which sets forth a new goal for the Department of the Interior to approve 20,000 MW of renewable energy projects on the public lands by 2020, in order to ensure America's continued leadership in clean energy.

The BLM will decide whether to approve, approve with modifications, or deny the Grant Holder's Level 3 variance request and the issuance of an amendment to the BSPP's existing ROW grant based on the Modified Project.

ES.4 Scope of the Draft EIS

This Draft EIS fully analyzes the Grant Holder's proposal to construct, operate, maintain, and decommission the Modified Project (Alternative 1) as well as the BLM's denial of the variance request which would maintain the current ROW grant approvals on the site within the approximately 4,433-acre area now currently controlled by the Grant Holder (Alternative 2). Further, as part of the Draft EIS, Alternatives 1 and 2 are compared to the Approved Project and the No Project alternatives from the 2010 PA/FEIS included as Appendix A. This Draft EIS does not supersede or replace the BLM's 2010 PA/FEIS or other consideration of the Approved Project, but rather, to the extent applicable, is tiered to the analysis in the 2010 PA/FEIS and 2010 ROD.

ES.5 Public Involvement, Consultation and Coordination

The BLM published the Notice of Intent to prepare an EIS for the Modified Project in the Federal Register (78 Fed. Reg. 53778) on August 30, 2013. On September 17, 2013, the BLM held a publicly noticed scoping meeting in Blythe, California. Written comments were received during the scoping period, which concluded on September 30, 2013. A Scoping Report was prepared, and is included for agency and public review as Appendix D of this Draft EIS.

The BLM conducted government-to-government consultation for the Approved Project with a number of Tribal governments. The BLM invited the Indian tribes who had participated in government-to-government consultation for the Approved Project to consult regarding the Modified Project. The BLM has reinitiated consultation under the Endangered Species Act Section 7 and continues to implement the Programmatic Agreement developed for the Approved Project in compliance with Section 106 of the National Historic Preservation Act. As part of the evaluation process for the Modified Project, the BLM also has undertaken interagency coordination with a number of agencies including the U.S. Environmental Protection Agency, Department of Defense, U.S. Army Corps of Engineers, California Energy Commission, California Department of Fish and Wildlife, State Water Resources Control Board/Regional Water Quality Control Board, State Historic Preservation Office, and Native American Heritage Commission.

ES.6 Summary Description of the BSPP Modified Project and Alternatives

The BSPP site is located in a rural area of the Colorado Desert in unincorporated Riverside County, California. The site is located approximately 8 miles west of the City of Blythe, approximately 32 miles east of the town of Desert Center, California, and approximately 3 miles north of the Interstate 10 freeway (I-10). It is south of McCoy Wash, east of the McCoy Mountains, north of the Blythe Airport, and adjacent to (and immediately south of) the BLM-approved McCoy Solar Energy Project, which is currently in pre-construction and is owned by McCoy Solar, LLC, a subsidiary of NextEra Energy Resources, LLC.

The Draft EIS analyzes approval of the Grant Holder's Level 3 variance request (Alternative 1), which involves the construction, operation, maintenance and decommissioning of PV technology instead of the approved thermal parabolic trough technology authorized under the 2010 ROW grant for the Approved Project. The Modified Project would generate less power within a smaller footprint than the Approved Project, i.e., a nominal capacity of 485 MW on 4,138 acres of the previously approved BLM-administered public land as opposed to the 1,000 MW on 6,831 acres authorized under the existing ROW grant. In addition, the solar plant site for the Modified Project would be reconfigured to allow transmission and access road corridors through the BSPP site for shared use with other approved and proposed projects, including (two projects located to the north: the BLM-approved McCoy Solar Energy Project and the proposed EDF Renewables McCoy Soleil project (shown on Figure 3.1-1). The reduced footprint of the Modified Project would be entirely within the boundary of the Approved Project.

The Draft EIS also analyzes denial of the Level 3 variance request (Alternative 2). This is the No Action Alternative for purposes of this Draft EIS. Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would be left with the approximately 4,433-acre ROW grant remaining after the partial relinquishment by the Grant Holder on March 7, 2013, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The current ROW approval after relinquishment represents approximately 65 percent of the Approved Project analyzed in the 2010 PA/FEIS and 2010 ROD. All other aspects of the project under Alternative after the partial relinquishment would be the same as the Approved Project.

As part of the Draft EIS, the effects of the Modified Project and Denial of the Proposed Modification (Alternative 2) are compared to the previously evaluated effects of the Approved Project and the effects that would occur if, rather than build the BSPP, the Grant Holder elected to relinquish the approved ROW grant and not build a solar project on the approved site (i.e., the effects of not constructing, operating, maintaining, and decommissioning a solar project on the site which were analyzed as the No Project alternative in the 2010 PA/FEIS). It is important to note that neither the original Approved Project (1,000 MW) nor the No Project alternatives analyzed in the 2010 PA/FEIS are among the possible decisions the BLM is considering in this Draft EIS; these comparisons are included for informational purposes only.

A comparison of the key design distinctions between the Modified Project (Alternative 1), Denial of the Proposed Modification (Alternative 2), and alternatives previously evaluated in the 2010 PA/FEIS is included in Table ES-1 below.

ES.7 Issues Addressed

Based on input received during the scoping period for this Draft EIS, issues of importance to agencies, organizations, and individuals include, but are not limited to, potential Modified Project impacts to air, biological, cultural, visual, and water resources, as well as impacts related to hazards and hazardous materials. These and other environmental resources and BLM program areas are analyzed in the Draft EIS as described below. The scoping process and public input received during that process are described and provided in Appendix D, *Scoping Report.*

TABLE ES-1
COMPARISON OF KEY DESIGN DISTINCTIONS

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification (Alternative 1)	**Deny Proposed Modification (Alternative 2)[a]**	**Approved Project**	**No Project/ No Action**
Solar Technology	Photovoltaic Panels	Solar Thermal Parabolic Trough	Solar Thermal Parabolic Trough	Not Applicable
Output	485 MW	650 MW	1000 MW	0 MW
Solar Plant Site Disturbance Area[b]	4,138 acres	4,433 acres	6,831 acres	0 acres
Cut and Fill	0.9 million cubic yards	5.4 million cubic yards	8.3 million cubic yards	0 cubic yards
Water Use for Construction	1,200 acre-feet	2,665 acre-feet	4,100 acre-feet	0 acre-feet
Water Use for Operation and Maintenance	40 acre-feet / year	390 acre-feet / year	600 acre-feet / year	0 acre-feet / year

NOTES:

[a] Values provided for Deny Proposed Modification have been generated by scaling Approved Project values relative to the number of solar plant site acres remaining in the existing ROW after the Grant Holder's relinquishment of 35 percent of the original ROW area.

[b] Includes the acreage in the linear (gen-tie and access road) corridor within the solar plant site.

SOURCE: NextEra Blythe Solar, 2013

ES.8 Environmental Consequences

The Draft EIS assesses the environmental consequences or impacts that would result from approval of the Modified Project (Alternative 1) and denial of the Modified Project (Alternative 2) on resources, resource uses, special designations, and other important topics (including public health and safety, social and economic considerations, and environmental justice conditions). The environmental effects of constructing, operating, maintaining, and decommissioning the Modified Project and alternatives are summarized in Table ES-2.

Mitigation measures that were included in the Environmental and Construction Compliance Monitoring Plan (ECCMP) for the Approved Project (Appendix 4 of the 2010 ROD, included as Appendix B) are based on a variety of authorities, including Conditions of Certification imposed by the California Energy Commission as part of its licensing process for the Approved Project pursuant to California state law. Because they are part the existing approvals for the BSPP, these mitigation measures apply to the Modified Project and alternatives. However, based on the analysis in this Draft EIS, proposed modifications to mitigation measures included in the approved ECCMP may be warranted. Proposed modifications to approved ECCMP measures are identified in the relevant resource analyses sections of the Draft EIS.

TABLE ES-2
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Air Resources				
Construction and Decommissioning Emissions	Potential exceedances of state and federal AAQSs for PM10; Emissions would be decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10; Emissions would be increased compared to the Modified Project but decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10	None
Operation and Maintenance Emissions	Potential exceedances of state AAQSs for PM10; Emissions would be decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10; Emissions would be increased compared to the Modified Project but decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10	None
Biological Resources – Vegetation				
Vegetation Community				
Desert dry wash woodland	26 acres	31 acres	213 acres	0 acres
Unvegetated ephemeral dry washes	3.3 acres	4.1 acres	8.7 acres	0 acres
Vegetated ephemeral streams[a]	265 acres	276 acres	371 acres	0 acres
Subtotal ephemeral drainages	*295 acres*	*312 acres*	*592 acres*	0 *acres*
Stabilized and partially stabilized dunes	0 acres	0 acres	58 acres	0 acres
Sonoran creosote bush scrub[b]	3,847 acres	4,123 acres	6,365 acres	0 acres
Disturbed habitat	0 acres	0 acres	0 acres	0 acres
Agriculture[c]	0 acres	0 acres	4.4 acres	0 acres
Developed	0 acres	0 acres	4.9 acres	0 acres
TOTAL	4,142 acres	4,435 acres	7,025 acres	0 acres
Special-Status Plants[d]				
Harwood's milk-vetch	248 individuals	248 individuals	637 individuals	0 individuals

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	Deny Proposed Modification	Approved Project	No Project
Biological Resources – Vegetation (cont.)				
Las Animas colubrine	0 individuals	10 individuals	55 individuals	0 individuals
Harwood's eriastrum	0 individuals	0 individuals	13 individuals	0 individuals
Abrams' spurge	2,185 individuals	2,185 individuals	0 individuals	0 individuals
ribbed cryptantha	0 acres/individuals	0 acres/individuals	58 acres (1.5 million individuals)	0 acres/individuals
winged cryptantha	0 individuals	0 individuals	0 individuals	0 individuals
Utah milkvine	62 individuals	87 individuals	621 individuals	0 individuals
desert unicorn plant	1,091 individuals	1,093 individuals	9 individuals	0 individuals
Biological Resources – Wildlife				
Wildlife Species or Species Group (habitat affected)				
Desert tortoise	4,070 acres	4,433 acres	7,027 acres	0 acres
Mojave fringe-toed lizard	0 acres	0 acres	50 acres	0 acres
Couch's spadefoot toad	0.13 acre	0.13 acre	0.13 acre	0 acres
Migratory birds	4, 070 acres	4,433 acres	7,027 acres	0 acres
Golden eagle	4, 070 acres	4,433 acres	7,027 acres	0 acres
Burrowing owl	4, 070 acres	4,433 acres	7,027 acres	0 acres
Desert kit fox	4, 070 acres	4,433 acres	7,027 acres	0 acres
American badger	4, 070 acres	4,433 acres	7,027 acres	0 acres
Nelson's bighorn sheep	0 acres	0 acres	922 acres	0 acres
Desert tortoise	4,070 acres	4,433 acres	7,027 acres	0 acres
Mojave fringe-toed lizard	0 acres	0 acres	50 acres	0 acres
Couch's spadefoot toad	0.13 acre	0.13 acre	0.13 acre	0 acres
Migratory birds	4, 070 acres	4,433 acres	7,027 acres	0 acres
Golden eagle	4, 070 acres	4,433 acres	7,027 acres	0 acres
Burrowing owl	4, 070 acres	4,433 acres	7,027 acres	0 acres

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Climate Change				
Construction total CO2e	54,615 metric tons	67,535 metric tons	103,900 metric tons	none
Operation annual CO2e	126 metric tons	9,613 metric tons	14,789 metric tons	none
Annual electricity generated	1,104,636 MWh	1,365,000 MWh	2,100,000 MWh	none
Operational CO2e per MWh	0.0001	0.0070	0.0070	none
Loss of Carbon Uptake (CO2e/year)	3,785 metric tons	4,123 metric tons	8,806 metric tons	none
Net Reduction in CO2e per year	395,924 metric tons	480,341 metric tons	736,524 metric tons	none
Cultural Resources				
Archaeological resources impacted	99 archaeological sites (solar site only)	103 archaeological sites (solar site only)	189 archaeological sites (solar site only)	No cultural resources impacted
Hazards and Hazardous Materials				
Minimum Amount of Hazardous Material Stored On-Site (Gas/Liquid/Solid)	262,670 ft^3 / 264,765 gallons / 4050 lbs.	Less than but similar to Approved Project	366,433 ft^3 / 1,345,510 gallons / n/a	None
Non-Hazardous Solid Waste Generated During Construction	41 cubic yards/week	Less than but similar to Approved Project	70 cubic yards/week	None
Hazardous Materials Specific to Technology	Cadmium telluride (if thin-film panels used)	Heat transfer fluid	Heat transfer fluid	None
Aviation Safety Hazards	Potential glint and glare from PV panels	Potential glint and glare from mirrored troughs	Potential glint and glare from mirrored troughs	None
Geologic Hazards	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	None
Site Security	Mitigated minor security risks; “low vulnerability” site	Mitigated minor security risks; “low vulnerability” site	Mitigated minor security risks; “low vulnerability” site	No impact

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Lands and Realty				
Impacts to existing authorized uses	None	None	None	None
Nonconformance with the CDCA Plan	None	None	None	None
Nonconformance with CDCA Plan MUC L guidelines	None	None	None	None
MUC L lands with use opportunities restricted	4,138 acres	4,433 acres	6,831 acres	0 acres
Mineral Resources				
Area unavailable for mineral resource extraction	4,138 acres	4,433 acres	6,831 acres	0 acres
Noise				
Construction and Decommissioning Noise	The worst-case daytime hourly construction L_{eq} could be distinguishable at the nearby residences, but would not be expected to cause an adverse reaction at the closest residence. This impact would be less severe than construction-related impacts that would be associated with the Approved Project.	The worst-case daytime hourly construction L_{eq} could be distinguishable at the nearby residences, but would not be expected to cause an adverse reaction at the closest residence. The impact would be essentially the same as for Modified Project, which would be less severe than construction-related impacts that would be associated with the Approved Project.	Construction noise would elevate the existing ambient noise level at the nearest residential receptor by 16 dBA, a considerable increase.	No impacts would occur.
Operation and Maintenance Noise	The worst-case daytime hourly operation and maintenance L_{eq} would be slightly lower than the Approved Project and Alternative 2, and would not be distinguishable at the nearby residences.	The worst-case daytime hourly operation and maintenance L_{eq} would be slightly higher than the Modified Project, but would not be distinguishable at the nearby residences.	The worst-case daytime hourly operation and maintenance L_{eq} would not likely be distinguishable at the nearby residences.	No impacts would occur.
Paleontological Resources				
Cut and Fill	0.9 million cubic yards	5.4 million cubic yards	8.3 million cubic yards	None

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Recreation				
Direct impacts on recreational resources	4,070 acres unavailable, access through the site would be maintained	4,433 acres unavailable, access through the solar plant site would not be allowed	6,831 acres unavailable, access through the solar plant site would not be allowed	None
Construction noise impacts on recreation	Less noise compared to Approved Project	Same as Approved Project	Construction noise would be temporary and not likely to affect recreational users	None
Construction dust impacts on recreation	Less dust would be generated than assessed for the Approved Project	Less dust would be generated than assessed for the Approved Project	Construction dust may temporarily affect the visual quality of the area and thereby degrade recreational experiences in the area	None
Construction traffic impacts on recreation	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily degrade recreational experiences in the area	None
Visual impacts on recreation	Lower visual profile than Alternative 2 and the Approved Project, and therefore reduced impacts to recreational experiences in the area	Lower visual profile than the Approved Project, but greater visual profile than Alternative 2. Therefore, greater impacts to recreational experiences in the area when compared to Alternative 1 and reduced impacts when compared to the Approved Project	Construction and operation of the solar plant would adversely affect the visual quality of the area and thereby degrade recreational experiences in the area	None
Socioeconomics and Environmental Justice				
Construction Jobs (direct, indirect, and induced)	628	640	1,066	0
Operation and Maintenance Jobs (direct, indirect, and induced)	24	177	295	0
Construction Annual Economic Benefit plus Tax Payments	$60,458,000	$120,885,000	$140,120,000	$0
Operation Annual Economic Benefit plus Tax Payments	$2,200,791	$18,120,000	$30,200,000	$0
Environmental Justice effects	No disproportionate effects	No disproportionate effects	No disproportionate effects	No effect

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Soil Resources				
Approximate acres disturbed, by soil unit	Rillito-Gunsight: 440 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 2,310 Rositas-Orita-Carrizo-Aco: 1,360	Rillito-Gunsight: 800 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 2,310 Rositas-Orita-Carrizo-Aco: 1,360	Rillito-Gunsight: 2,446 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 3,058 Rositas-Orita-Carrizo-Aco: 1,490	0
Special Designations				
Impacts to Wilderness Areas and lands with wilderness characteristics	Visual impacts due to dust and the conversion of 4,070 acres of open space to solar field	Visual impacts due to dust and the conversion of 4,433 acres of open space	Visual impacts due to dust and the conversion of 6,831 acres of open space	None
Impacts to ACECs	None	None	None	None
Impacts to Wilderness Areas and lands with wilderness characteristics	Visual impacts due to dust and the conversion of 4,070 acres of open space to solar field	Visual impacts due to dust and the conversion of 4,433 acres of open space	Visual impacts due to dust and the conversion of 6,831 acres of open space	None
Transportation and Travel Management				
Construction traffic impacts on traffic flow	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily increase delays on area roads and at area intersections	None
Operation and Maintenance traffic impacts on traffic flow	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily increase delays on area roads and at area intersections	None
Impacts of oversized or overweight trucks	Same as Approved Project	Same as Approved Project	Roadways could be damaged	None
Impacts of parking demand during construction	Same as Approved Project	Same as Approved Project	Parking demand would be accommodated on-site	None
Impacts of parking demand during operation and maintenance	Same as Approved Project	Same as Approved Project	Parking demand would be accommodated on-site	None

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Visual Resources				
Construction airborne dust	Less dust would be generated than assessed for the Approved Project	Less dust would be generated than assessed for the Approved Project	Construction dust may temporarily affect the visual quality of the area	None
Construction equipment and activities	Less equipment would be needed and the construction period would be shorter than assessed for the Approved Project	Less equipment would be needed and the construction period would be shorter than assessed for the Approved Project	Construction operations, including equipment and associated activities would contrast with the existing natural scenery	None
Nighttime construction lighting	Less lighting would be needed than assessed for the Approved Project	Less lighting would be needed than assessed for the Approved Project	Nighttime construction lighting would attract attention and create adverse visual effects by adding a glow effect to the night sky	None
Vegetation clearing creating visual contrast by exposing geometric lines of earth adjacent to the random pattern and texture of existing vegetation	Up to 4,138 acres of vegetation trimmed, vegetation cleared on graded areas	Up to 4,433 acres of vegetation cleared	Up to 6,831 acres of vegetation cleared	None
Nighttime operational lighting	Less lighting would be needed than assessed for the Approved Project	Less lighting would be needed than assessed for the Approved Project	Nighttime construction lighting could attract attention and create adverse visual effects by adding a glow effect to the night sky	None
Glare and glint	Less glare and glint would be experienced than assessed for the Approved Project due to the use of PV technology	Glare and glint from solar thermal parabolic trough technology, though reduced from the amount assessed for Approved Project, would be present	Glint from the solar arrays could be distracting or nuisance-causing, glare produced by the Approved Project would increase the visual contrast of the project in the landscape	None
Visual contrast in form, line, color, and texture	Overall, less visual contrast would be experienced than assessed for the Approved Project due to the reduction in area and structures. The project would create moderate-weak visual contrast with the landscape from the majority of the KOPs assessed for the Modified Project. The degree of contrast in	Less visual contrast would be experienced than assessed for the Approved Project due to the reduction in area, more visual contrast would be experienced than assessed for the Modified Project due to the amount of equipment and structures required for solar thermal parabolic trough technology	The project would create strong-moderate visual contrast with the landscape from the majority of the KOPs assessed for the Approved Project	None

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Visual Resources (cont.)				
Visual contrast in form, line, color, and texture (cont.)	form would be reduced from Strong/Moderate to Moderate/ Weak. The degree of contrast in color would be reduced from Strong/Moderate to Moderate. The degree of contrast in line and texture would remain about equal.			
Water Resources				
Erosion and drainage	Disturbance of 4,138 acres within the ROW	Disturbance of 4,433 acres within the ROW	Disturbance of 6,831 acres	No disturbance
State jurisdictional waters	247 acres	264 acres	592 acres	None
Effect on groundwater levels and supply from project water usage	1,200 AF during construction	2,665 AF during construction	4,100 AF during construction	None
	40 AFY during operation and maintenance and decommissioning	390 AFY during operation and maintenance and decommissioning	600 AFY during operation and maintenance	None
Total groundwater consumption (construction, operation and maintenance, and decommissioning)	2,480 AF	15,145 AF	22,100 AF	None
Water quality effects of heat transfer fluid (HTF)	No use of HTF	Impact associated with use of HTF	Impact associated with use of HTF	No use of HTF
Water quality effects of land treatment units (LTUs)	No use of LTUs	Impact associated with LTUs	Impact associated with LTUs	No use of LTUs
RO Water Evaporation Pond area	Two 6-acre ponds (total of up to 12 acres)	Five to six 4-acre ponds (total of up to 24 acres)	Eight 4-acre ponds (total of up to 32 acres)	None
Effect from sanitary waste treatment during construction	Peak of 500 workers	Peak of 650 workers	Peak of 1,004 workers	None
Effect from process wastewater during construction	No concrete batch plant	Impacts from concrete batch plant operations	Impacts from concrete batch plant operations	None

TABLE ES-2 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF THE MODIFIED PROJECT AND ALTERNATIVES

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Wildland Fire Ecology				
Impacts on fire regime	Less impacts to fire regime than Approved Project due to decreased vehicle traffic/human presence and smaller disturbance footprint	Less impacts to fire regime than Approved Project due to decreased vehicle traffic/human presence and smaller disturbance footprint	Increased vehicle traffic/human presence may directly result in fire. Disturbance of soil will result in increased spread of invasive species	None

NOTES:

[a] Vegetated ephemeral streams analyzed are those supporting big galleta grass association.
[b] Includes disturbed Sonoran creosote bush scrub habitat.
[c] Includes active and fallow agriculture.
[d] Numbers of individual plants impacts by the Modified Project and the identified Alternative 2 are approximated where necessary

References

NextEra Blythe Solar Energy Center, LLC (NextEra Blythe Solar), 2013. Plan of Development Supplement, Blythe Solar Power Project, File # CACA – 048811. March 18.

Stetch, Katy, 2012. *Solar-Project Developer Files for Chapter 11*, The Wall Street Journal. April 2. [http://online.wsj.com/article/SB10001424052702303816504577319911577365668.html] Accessed September 11, 2013.

CHAPTER 1
Introduction

1.1 Introduction

NextEra Blythe Solar Energy Center, LLC[1] (Grant Holder) is the current owner and holder of a right-of-way (ROW) grant (CACA-048811) that the Bureau of Land Management (BLM) issued for the Blythe Solar Power Project (BSPP) on November 4, 2010 (BLM, 2010). The BLM analyzed[2] and approved a ROW grant[3] for the development of the BSPP as a 1,000-megawatt (MW) solar energy generating plant utilizing thermal parabolic trough solar generating technology on 6,831 acres of public land located near the City of Blythe in Riverside County, California, on October 22, 2010 (Approved Project). On June 21, 2013, the Grant Holder submitted a Level 3 variance request pursuant to the Record of Decision (2010 ROD)[4] to amend the existing ROW grant to convert the Approved Project to photovoltaic (PV) technology, reduce the size of the overall solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for shared use with other approved and proposed projects (the Modified Project). The Modified Project would generate less power within a smaller solar plant footprint than the Approved Project. It would have a nominal generating capacity of 485 MW on a solar plant site of 4,070 acres (4,138 acres including the on-site portion of the linear corridor). The reduced footprint of the Modified Project would be entirely within the boundary of the Approved Project.

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1 NextEra Blythe Solar Energy Center, LLC is a wholly owned subsidiary of NextEra Energy Resources LLC.

2 The California Energy Commission (CEC) and BLM cooperatively prepared a Staff Assessment and Draft Resource Management Plan Amendment and Environmental Impact Statement as a joint environmental analysis under state and federal law that was issued on March 19, 2010. The BLM issued a Proposed Plan Amendment/Final Environmental Impact Statement (PA/FEIS) pursuant to the Federal Land Policy and Management Act of 1976 (Pub.L. 94–579) (FLPMA) and the National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.) that was noticed in the August 20, 2010, Federal Register (75 Fed. Reg. 51,479). The PA/FEIS is provided as Appendix A.

3 The Secretary of the Department of the Interior signed a Record of Decision (ROD) for the BSPP on October 22, 2010. The ROD is provided as Appendix B.

4 As described in Appendix 4, Section 5.3 of the 2010 ROD, Level 3 variance requests generally involve project changes that would affect an area outside the previously approved work area; that are outside the areas previously surveyed for cultural resources, sensitive species, and biological resources; or that would change the function, structure, technology required, or other part of the project previously approved in the POD. The ROD notes that Level 3 variances may need to be implemented through an amendment to the ROW grant; such an amendment would be necessary to grant the Level 3 variance and approve the Modified Project.

1.2 Background

The initial project proponent and applicant for the BSPP, Palo Verde Solar I, LLC,[5] commenced construction following the November 4, 2010 receipt of the ROW grant and Notice to Proceed from the BLM. Palo Verde Solar I, LLC installed fencing and drainage infrastructure, and constructed a water well, well-related infrastructure, and an approximately 21,000-foot (4-mile) segment of the main access road to the solar plant site. The 2010 ROW grant authorization is for a 1,000 MW thermal trough project that was described and analyzed in the August 2010 Proposed Plan Amendment/Final EIS (2010 PA/FEIS) included as Appendix A of this Draft EIS and authorized in the October 2010 ROD included as Appendix B of this Draft EIS. Construction activities ceased on August 23, 2011, following Palo Verde Solar I's indication to the BLM that it planned to amend the existing authorizations for the Approved Project to allow the development of solar PV energy generation technology on the site. Upon this request, the BLM issued a Temporary Suspension Order for all surface disturbing activities. On September 8, 2011, the BLM authorized measures to stabilize the site and ensure that Palo Verde Solar I would remain in compliance with the terms of the approved ROW grant pending an amendment. The BLM requested that a modified Plan of Development (POD) be submitted within 90 days describing the proposed modifications (BLM, 2011) to the Project. Palo Verde Solar I proceeded to maintain the site in accordance with existing approvals and, in November 2011, completed the acquisition of 858.5 acres of agency-approved off-site mitigation land – 89.5 acres more than the 769 acres required for the first phase of construction as stipulated in the 2010 ROD for the Approved Project.

Beginning in December of 2011, Palo Verde Solar I's parent companies both in the United States and Europe filed for bankruptcy. First, Solar Millennium initiated the equivalent of bankruptcy proceedings in Germany, and in April 2012, Solar Trust of America filed for Chapter 11 bankruptcy protection in Delaware (Stetch, 2012). As part of that bankruptcy proceeding in Delaware, NextEra Blythe Solar, a subsidiary of NextEra Energy Resources, LLC, purchased the un-built assets of the Approved Project on July 12, 2012. BLM approved the transfer of the right-of-way grant/lease in connection with that transaction and NextEra Blythe Solar became the current Grant Holder. The Grant Holder proceeded with plans to convert the previously approved solar thermal project to a PV project on the approved site and requested on September 5, 2012 that theBLM lift the Temporary Suspension Order. The BLM granted such request on October 16, 2012, and the Grant Holder began to maintain the site in accordance with the existing ROW grant and other approvals. Additionally, the Grant Holder anticipated that a PV project on the site would require a smaller footprint than the approved solar thermal trough project, and relinquished to the BLM approximately 35 percent of the approved ROW grant area on March 7, 2013. The BLM approved this relinquishment on May 9, 2013. The Grant Holder submitted a Plan of Development Supplement (POD Supplement) and Level 3 variance request to the BLM on March 18, 2013, which requested that the BLM modify the Approved Project ROW grant to convert the Approved Project to PV technology, reduce the size of the solar plant site, and reconfigure the solar plant site to allow transmission and access road corridors through the BSPP site for shared use with other approved and proposed projects (i.e., approve the Modified Project).

[5] Palo Verde Solar I, LLC was a wholly owned subsidiary of Solar Millennium, a German company that founded Solar Trust of America in 2009 to develop utility scale solar energy projects in the United States.

This Draft EIS analyzes the impacts of the Modified Project requested through the Level 3 variance request and does not supersede or replace the BLM's 2010 PA/FEIS or other consideration of the Approved Project. Rather, the BLM, pursuant to its obligations under the Federal Land Policy and Management Act of 1976 (FLPMA) and National Environmental Policy Act of 1969 (NEPA), tiers this EIS to the 2010 PA/FEIS for the Approved Project to the extent that the analysis in that document informs or is relevant to the BLM's consideration of the effects of the Grant Holder's proposed conversion of the Approved Project to a different solar technology and associated reduction and reconfiguration of the solar plant site. This EIS also incorporates by reference the 2010 ROD approving the Approved Project to the extent relevant to its analysis of the modified project, and relies on information and analysis provided in the Final Programmatic EIS for Solar Energy Development in Six Southwestern States (Arizona, California, Colorado, Nevada, New Mexico, and Utah) (Solar PEIS) to the extent it informs an understanding of the environmental consequences of the requested action. The BLM has determined that reliance on the prior analysis is the most efficient way to meet the purposes of NEPA, avoiding redundancy in the process. Following receipt of comments on the Draft EIS for the Modified Project, the BLM will prepare a Final EIS before issuing a decision on the variance request.

1.3 Purpose and Need

The BLM's purpose and need in connection with the Modified Project is to respond to the Grant Holder's request for a Level 3 variance under Title V of FLPMA (43 U.S.C. §1701 et seq.) and modification of the existing ROW grant to include the construction, operation, maintenance and decommissioning of a 485 MW solar PV project in compliance with FLPMA, BLM ROW regulations, and other applicable federal laws consistent with its multiple use obligations under FLPMA. The existing ROW grant for the Approved Project authorizes a 1,000 MW thermal trough project that was described and analyzed in the 2010 PA/FEIS included as Appendix A of this Draft EIS and authorized by the 2010 ROD included as Appendix B of this Draft EIS. The BLM will decide whether to approve, approve with modifications, or deny the variance request and the issuance of a modified ROW grant to NextEra Blythe Solar Energy Center, LLC for the Modified Project.

In conjunction with FLPMA, BLM authorities include:

1. 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;"

2. Secretarial Order 3285A1, dated March 11, 2009, and amended on February 22, 2010, which "establishes the development of renewable energy as a priority for the Department of the Interior;" and

3. The President's Climate Action Plan, released on June 25, 2013, which sets forth a new goal for the Department of the Interior to approve 20,000 MW of renewable energy projects on the public lands by 2020, in order to ensure America's continued leadership in clean energy.

The BLM will decide whether to approve, approve with modifications, or deny the Grant Holder's Level 3 variance request and the issuance of an amendment to the BSPP's existing ROW grant based on the Modified Project.

1.4 Relationship of the Modified Project to BLM Laws, Policies, and Programs

The relationship of the Modified Project to the BLM's existing laws, policies, plans, and programs is generally the same as the relationship of the Approved Project to those same authorities as described in the 2010 PA/FEIS (Appendix A, p. 1-6 et seq.). The discussion has been updated as necessary below.

1.4.1 Relationship of the Modified Project to the CDCA Plan

The 2010 ROD for the Approved Project amended the CDCA Plan to identify the project site as available for solar energy development (Appendix B, p. 58) and made several required determinations regarding the amendment's conformance to the CDCA plan (Appendix B, pp. 31 through 38). Therefore, the Modified Project would not require a CDCA Plan amendment.

1.4.2 Relationship of the Modified Project to the Solar PEIS

The BLM issued the Final Programmatic EIS for Solar Energy Development in Six Southwestern States (Arizona, California, Colorado, Nevada, New Mexico, and Utah) (Solar PEIS) in July 2012 and signed the associated ROD on October 12, 2012. The Solar PEIS ROD recognizes all approved solar energy projects on BLM-administered lands and does not affect the status of any of these approved projects (Solar PEIS ROD Section B.1.3). In accordance, a modification to the Approved Project also would not be subject to the decisions made through the Solar PEIS ROD. If the current Approved Project were to be abandoned and the approved ROW relinquished, the lands on which the ROW grant exists would be subject to the land use plan decisions made through the Solar PEIS ROD. This would affect any future application proposed on the site.[6]

1.4.3 Relationship of the Modified Project to the California Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) process is currently underway; however, because the process remains in progress, no decisions have been made regarding the DRECP that govern the BLM's consideration of the Modified Project. The DRECP ROD will not affect applications that have reached a project-level ROD prior to completion of the DRECP.[7] Because the Approved Project was issued a ROD in October 2010, it is not subject to the DRECP

6 For example, future projects would be subject to the Solar PEIS ROD's amendment of the CDCA Plan to designate the Riverside East Solar Energy Zone (including the BSPP site) as a priority area for commercial-scale solar development.

7 A list of such applications can be viewed online at: http://drecp.org/documents/docs/alternatives_eval/Appendices/Appendix_I_Pending_Projects.pdf

process. The Modified Project is considered administration of an existing grant, and therefore also will not be subject to the DRECP ROD.

1.5 Relationship to Non-BLM Laws, Policies, and Plans, and Programs

1.5.1 Coordination with the California Energy Commission

The California Energy Commission (CEC) has the exclusive authority to certify and license the construction, modification, and operation of thermal electric power plants in California that generate 50 MW or more. CEC certification is in lieu of any permit required by state, regional, or local agencies. As a thermal electric power project greater than 50 MW, the Approved Project was subject to CEC jurisdiction. BLM and CEC staff collaborated on the review and environmental analysis of the Approved Project. The BLM and CEC issued a joint draft environmental analysis and then separate final documents for compliance with NEPA and the California Environmental Quality Act (CEQA), respectively. The CEC issued its Final Decision for the Approved Project on September 15, 2010.

Section 25500.1 of the California Public Resources Code authorizes the CEC to review amendments to convert proposed solar thermal power plants, approved by the CEC and sited on federal land, to the use of PV technology. Section 25500.1(d) requires the CEC to use its amendment process under Section 1769 of Title 20 of the California Code of Regulations. The Grant Holder submitted a Revised Petition for Amendment to the CEC, which evaluated the environmental impacts of the proposed modifications, assessing their consistency with the Approved Project and determining whether the Modified Project would remain in compliance with applicable laws, ordinances, regulations, and standards. For the Modified Project to be constructed, an amended certification is required from the CEC in addition to a revised ROW grant from the BLM. The CEC issued a Commission Decision on January 21, 2014 granting the Petition to Amend and a certificate to construct and operate the Modified Project (CEC, 2014). The BLM and CEC staff will continue to work cooperatively to review the Modified Project and administer mitigation measures and conditions of certification as outlined in the adopted ECCMP for the Approved Project and as modified by the CEC's Commission Decision and BLM's ROD for the Modified Project.

1.5.2 Relationship with Other Non-BLM authorities

The relationship of the Modified Project to other non-BLM policies, plans, and programs remains substantially as described in Section 1.5 of the 2010 PA/FEIS (Appendix A, p. 1-8) and is not repeated here.

1.6 Federal Permits, Licenses, and Other Entitlements

To implement the Modified Project, the Grant Holder may need to modify existing federal permits, licenses, agreement or other entitlements, as well as to meet other requirements set forth

by law, regulation, ordinance, or policy. The environmental effects of compliance with applicable requirements are analyzed as part of the Modified Project throughout this EIS. Potential permit requirements and other federal entitlements identified to date that may need to be modified include:

1. The BLM ROW Grant (CACA-048811); and

2. Amendment to the Programmatic Agreement for compliance with Section 106 of the NHPA.

References

Bureau of Land Management (BLM), 2011. Response to Temporary Suspension Application Received/Serialized. September 8.

BLM, 2010. Right-of Way Lease/Grant, Serial Number CACA-048811. November 4, 2010. [http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/blythe_feis0.Par.24015.File.dat/BSPP%20Fully%20Executed%20ROW.pdf]

California Energy Commission (CEC), 2014. Blythe Solar Power Project Amendment Commission Decision. [http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-06C/TN201580_20140121T101128_Blythe_Solar_Power_Project_Amendment_Commission_Decision.pdf]

Stetch, Katy, 2012. *Solar-Project Developer Files for Chapter 11*, The Wall Street Journal. April 2. [http://online.wsj.com/article/SB10001424052702303816504577319911577365668.html] Accessed September 11, 2013.

CHAPTER 2
Proposed Modification and Alternatives

2.1 Introduction

As described in the Environmental and Construction Compliance Monitoring Plan (ECCMP) for the Approved Project (Appendix 4 of the 2010 Record of Decision (ROD) included as Appendix B to this Draft EIS), Level 3 variance requests generally involve project changes that would affect an area outside the previously approved work area, or that would change the function, structure, technology required, or other part of the project previously approved in a ROD. Level 3 variances may need to be implemented through an amendment to the right-of-way (ROW) grant. NextEra Blythe Solar Energy Center, LLC's (NextEra Blythe Solar or Grant Holder) Level 3 variance request in this case is to modify the Approved Project (see Appendix B) to use photovoltaic (PV) technology instead of parabolic trough technology. The Modified Project would generate less power within a smaller footprint than the Approved Project, i.e., a nominal capacity of 485 megawatts (MW) on 4,138 acres of the previously approved BLM-administered public land instead of 1,000 MW on 6,831 acres as reflected in the 2010 ROD. As explained below, based on the March 7, 2013 partial relinquishment by the Grant Holder of a portion of the approved ROW grant, the total capacity of the approved solar thermal project is approximately 650 MW on 4,433 acres. The BLM has determined that, if approved, the Level 3 variance for the BSPP will be implemented through an amendment to the existing ROW.

The project site is located in a rural area of the Colorado Desert in unincorporated Riverside County, California (Figure 2-1). The site is located approximately 8 miles west of the City of Blythe, approximately 32 miles east of the town of Desert Center, California, and approximately 3 miles north of the Interstate 10 freeway (I-10). It is south of McCoy Wash, east of the McCoy Mountains, north of the Blythe Airport, and adjacent to (and immediately south of) the BLM-approved McCoy Solar Energy Project (MSEP) (Figure 2-2). Additional description of the site, including its location, the surrounding area, and the approved means of access, is provided in the Proposed Plan Amendment and Final EIS (2010 PA/FEIS) for the Approved Project, included here as Appendix A (Section 2.2.1, p. 2-2 et seq.; see also, p. A-3, Figure 1 and p. A-4, Figure 2a).

This chapter describes the BLM's potential decisions and alternatives regarding the Level 3 variance request. As explained in Chapter 1, the BLM will decide whether to approve, approve with modifications, or deny issuance of a modified ROW grant to the Grant Holder in response to its variance request. This Draft EIS fully analyzes the Grant Holder's Modified Project (Alternative 1) pursuant to the Level 3 variance request, which is described in Section 2.2. The Draft EIS also fully analyzes the BLM's denial of the variance request (Alternative 2; No Action), which would maintain the existing ROW grant approval as modified by the March 7,

2013 voluntary relinquishment (shown on Figure 2-3).[1] As explained below, denial of the Modified Project (the "No Action Alternative" for NEPA purposes), is described in Section 2.3. As part of the Draft EIS, the effects of the Modified Project (Alternative 1) and the Denial of the Modified Project (Alternative 2) are compared to the previously evaluated effects of the Approved Project (see 2010 ROD provided in Appendix B of this Draft EIS) and the effects that would occur if, rather than build the Approved Project, the Grant Holder elected to relinquish the approved ROW grant and not build a solar project on the site at all (i.e., the effects of not constructing, operating, maintaining, and decommissioning a solar project on the site which were analyzed as the No Project alternative in the 2010 PA/FEIS). The Approved Project and No Project alternative analyzed in the 2010 PA/FEIS are summarized in Section 2.4.

None of the land use plan decisions analyzed in the 2010 PA/FEIS and approved in the 2010 ROD for the Approved Project need to be revisited for purposes of the Level 3 variance now under consideration. A comparison of the key design distinctions of the various alternatives is summarized in Table 2-1. This chapter also describes the alternatives that were considered but eliminated from detailed analysis, including the screening process relied upon (Section 2.6). For the reasons described in Section 2.5, the BLM tentatively has identified the Modified Project (Alternative 1) as the Agency Preferred Alternative.

TABLE 2-1
COMPARISON OF KEY DESIGN DISTINCTIONS

	Current BLM Action (Impacts Analyzed in this EIS)		**Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)**	
	Approve Proposed Modification (Alternative 1)	**Deny Proposed Modification[a] (Alternative 2)**	**Approved Project**	**No Project/ No Action**
Solar Technology	Photovoltaic Panels	Solar Thermal Parabolic Trough	Solar Thermal Parabolic Trough	Not Applicable
Output	485 MW	650 MW	1000 MW	0 MW
Solar Plant Site Disturbance Area[b]	4,138 acres	4,433 acres	6,831 acres	0 acres
Cut and Fill	0.9 million cubic yards	5.4 million cubic yards	8.3 million cubic yards	0 cubic yards
Water Use for Construction	1,200 acre feet	2,665 acre feet	4,100 acre feet	0 acre feet
Water Use for Operation and Maintenance	40 acre feet / year	390 acre feet / year	600 acre feet / year	0 acre feet / year

NOTES:

a Values provided for Deny Proposed Modification have been generated by scaling Approved Project values relative to the number of solar plant site acres remaining in the existing ROW after the Grant Holder's relinquishment of 35 percent of the original ROW area.

b Includes the acreage in the linear (gen-tie and access road) corridor within the solar plant site.

SOURCE: NextEra Blythe Solar, 2013a

[1] Anticipating that a PV project on the site would require a smaller footprint than the approved solar thermal trough project, the Grant Holder relinquished approximately 35 percent of the approved ROW grant on March 7, 2013.

2.2 Modified Project

2.2.1 Overview

The Grant Holder provided information about the Modified Project in April 2013, when it submitted a Plan of Development (POD) Supplement to the BLM and a Revised Petition for Amendment (PTA) to the California Energy Commission (CEC) (NextEra Blythe Solar, 2013a, b). The Modified Project as proposed in the POD Supplement is shown in Figure 2-4. A comparison of components of the Approved Project and Modified Project is provided in Table 2-2. This comparison identifies the components of the Approved Project that would not be changed by the Modified Project and highlights the components that would be changed. Only the components that would be changed by the Modified Project are analyzed in this EIS. Components that would not change are not described in detail or re-analyzed in this EIS because they were analyzed in the 2010 PA/FEIS and approved in the 2010 ROD. The components that would not change include linear facilities outside the solar plant site including the generation tie line and the access road.

The Modified Project would not affect or necessitate any changes to the BLM's prior decisions to amend the California Desert Conservation Area (CDCA) Plan and the Northern & Eastern Colorado Desert Coordinated Management Plan (NECO) Amendment to the CDCA Plan (NECO Plan). As described in more detail in Appendix B, the 2010 ROD amended the CDCA Plan to identify the BSPP site as suitable for the proposed type of solar energy development. It also amended the NECO Plan to close three open routes (Routes 661085, 66113, and 66115) comprising approximately 4.5 miles of public access. Because these prior decisions would not be affected by the Modified Project, this EIS does not describe or reanalyze them.

2.2.1.1 Proposed Modifications to Approved Solar Plant Site Structures and Facilities

As modified, the solar plant would be composed of four individual plants or phases identified as Units 1 through 4. Units 1 through 3 each would have an approximate nominal generation capacity of 125 MW, while the capacity of Unit 4 would be 110 MW.[2] Unit 1 would be located in the northern central portion of the site. Construction of Unit 1 would include a shared operation and maintenance building, parking area, and water treatment system facilities to serve all four units, which would be located in the center of the site, adjacent to the gen-tie corridor and west of Units 1 and 2. It would enclose approximately 1,065 acres within its fence, inclusive of these shared facilities. Unit 2 would be located in the southern central portion of the site and would include approximately 1,054 acres. Unit 3 would be located on the eastern portion of the site, adjacent to Units 1 and 2, and would include approximately 1,065 acres. Unit 4 would be located in the northwest portion of the site, west of the gen-tie corridor, and would include approximately 886 acres. The total area enclosed within fences would be 4,070 acres. The on-site portion of the linear corridor would not be fenced and would cover approximately 68 acres, for a total of 4,138 acres within the Alternative 1 site.

[2] Nominal plant capacity refers to generation and delivery of power under ideal conditions. The instantaneous capacity of any solar energy facility is dependent on many factors and changes over a course of a day, a season, or year regardless of the technology, geographic location, or design. The nominal capacity is understood to mean the peak power-generating capacity of the facility expressed in watts minus all auxiliary, internal (parasitic) loads.

TABLE 2-2
COMPARISON OF COMPONENTS OF THE APPROVED PROJECT AND MODIFIED PROJECT

Approved Project	Modified Project
Solar Plant Site	
Approximately 6,831 acres	Reduced to approximately 4,138 (4,070 acres not including on-site linear facilities)
Facilities and Infrastructure within the Solar Plant Site	
Four adjacent power block units, each to generate approximately 250 MW using solar thermal parabolic trough technology to generate and collect energy, including via heat transfer fluid (HTF) piping. Each unit to include a steam turbine, evaporation pond, auxiliary boiler, 120-foot-tall air-cooled condenser, and related equipment and structures. See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-3 et seq.) Solar plant site lighting would provide illumination for nighttime construction activities as well as for normal and emergency operation and maintenance activities (Appendix A, pp. 2-17, 4.18-6).	Four adjacent power block units composed of PV panel arrays configured for either horizontal tracking or fixed-tilt operations capable of generating approximately 485 MW in total (3 units at 125 MW each and 1 unit at 110 MW). All thermal trough technology components and systems would be eliminated. See Section 2.3.1.2, *Solar Plant Site Structures and Facilities*. No change to approved solar plant site lighting.
Land treatment unit to bioremediate HTF-contaminated soil (360,000 square feet, or 8.26 acres). See 2010 PA/FEIS Section 2.2.2 (Appendix A, pp. 2-4, 2-5).	Would be eliminated.
One weather station per power block unit to provide real-time measurements of weather conditions that affect the solar field operation. See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-3).	Each power conversion station (PCS) would include inverter hardware that would convert the direct current (DC) electric input into grid-quality alternating current (AC) electric output. Integrated components would include up to four previously approved weather stations to record weather conditions, including ambient temperature measured in degrees Celsius (°C), incoming solar radiation measured in watts per square meter, and wind speed measured in meters per second.
On-site transmission facilities, including a switchyard (250,000 square feet, or 5.74 acres) located centrally within the solar plant site. See 2010 PA/FEIS Section 2.2.2 (Appendix A, pp. 2-4, 2-5).	The approved switchyard would be modified within the scope of the previously approved on-site transmission and switchyard facilities to accommodate elimination of the power blocks and replacement of the solar thermal trough generation technology with PV.
Administration Building (approximately 10,000 square feet, or 0.23 acre). See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-5).	Would be reduced to approximately 3,000 square feet.
Office and parking area (approximately 40,600 square feet, or 0.93 acre). See 2010 PA/FEIS Section 2.2.2 (Appendix A, pp. 2-4,. 2-5).	Would be reduced to approximately 10,000 square feet.
Assembly hall/warehouse/maintenance building (approximately 2.52 acres) within lay-down area (total of 47.5 acres). See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-5).	Would be eliminated.
Concrete batch plant. See Appendix A (pp. 2-7, 5-26).	Would be eliminated.
Fuel depot (75 feet x 150 feet) to refuel, maintain, and wash construction vehicles. It would have two 2000-gallon on-road vehicle diesel tanks, two 8,000-gallon off-road vehicle diesel tanks, one 500-gallon gasoline tank, and one wash water holding tank. The fuel farm would include secondary spill containment, a covered maintenance area also with secondary containment, and a concrete pad for washing vehicles. See Appendix A (pp. 2-8, 5-32, 5-33).	No change.

TABLE 2-2 (Continued)
COMPARISON OF COMPONENTS OF THE APPROVED PROJECT AND MODIFIED PROJECT

Approved Project	Modified Project
Facilities and Infrastructure within the Solar Plant Site (cont.)	
Unpaved maintenance roads (52.6 miles x 24 feet, or approximately 153 acres). See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-5).	Would be reconfigured to accommodate the change in solar technology and to allow transmission and maintenance access for projects to the north of the site; cut and fill for unpaved maintenance roads approximately 198 acres.
Perimeter fencing and maintenance road, controlled (gated) access, and ancillary security facilities. See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2 5) and Section 2.4.1 (Appendix A, p. 2-17).	No change. Site security systems would be monitored regularly by on-site personnel and an off-site 24-hour Remote Operations Center.
Solar Plant Site Surface Water Management: a. Three drainage structures that, collectively, would surround solar plant site to reroute surface water through and around the solar plant site. See 2010 PA/FEIS Section 2.2.2 (Appendix A, p. 2-4); Section 2.2.3 (Appendix A, p. 2-6). b. Grading of approximately 7,000 acres to provide a flat, uniform, vegetation-free topography as would be required for construction and operation of the Approved Project. See 2010 PA/FEIS Section 4.19.2 (Appendix A, p. 4.19-8).	a. The major drainage structures would be eliminated, although smaller drainage features (e.g., small culverts or Arizona crossings) would be required to maintain existing, pre-BSPP natural drainage patterns through the solar plant site. b. The Modified Project's PV technology would not require an entirely flat surface, and so would require less grading than the Approved Project.
Linear and Other Structures and Facilities	
Site Access: From Exit #232, Airport/Mesa Drive on I-10 via Mesa Drive Road (Appendix A, p. 2-2). A new, paved public road (Dracker Drive) (approximately 11,000 feet x 24 feet wide, or 6.06 acres) to be constructed, operated, and maintained that would head north from a portion of Black Rock Road to be upgraded as part of the Approved Project to the on-site office (Appendix A, pp. 2-4, 2-6, 2-16, 5-30).	No change.
Generation tie (gen-tie) line (Appendix A, p. 5-28, 5-29): Double circuit 230 kV. Within solar plant site: 120 feet x 15,500 feet (approximately 3 miles, or 43 acres). Outside the fence: 225 feet x 35,500 feet (approximately 6.5 miles, or 183 acres including a 100 foot x 100 foot site for each transmission tower). Approved pole heights range from 90 (along the north-south span) to 145 feet. Pole heights and corresponding span lengths meet Federal Aviation Administration (FAA) requirements for the nearby Blythe Airport. (Appendix A, p. 2-5).	No change.
Interconnection at Southern California Edison's Colorado River Substation (Appendix A, pp. 1-2, 2-2)	No change.
Telemetry and telecommunications infrastructure (fiber optic cable lines). The 2010 PA/FEIS describes solar plant site communications (voice and data) and telecommunication lines, including fiber optic cable. See Appendix A, pp. 2-6, 2-13, 5-32).	No change.
Distribution line (12.47 kV) to be constructed to provide power during site construction as described in the 2010 PA/FEIS (see, e.g., Appendix A, pp. ES-5, 2-8, 2-13, 5-31).	No change.

TABLE 2-2 (Continued)
COMPARISON OF COMPONENTS OF THE APPROVED PROJECT AND MODIFIED PROJECT

Approved Project	Modified Project
Linear and Other Structures and Facilities (cont.)	
Natural gas pipeline	
Construction: 4 inches in diameter by 9.8 miles long (of which approximately 8 miles would be constructed on site) to connect the Approved Project to an existing Southern California Gas (SCG) pipeline situated south of I-10 as described in the 2010 PA/FEIS (Appendix A, pp. ES-5, 2-5, 2-13).	Would be eliminated.
Removal: Removal of the segment of existing natural gas line that has been abandoned in place on a portion of the site (Appendix A, pp. 2-13, 5-29).	No change.
Other Requirements	
Construction period and workforce (2010 PA/FEIS Section 2.2.3; Appendix A, p. 2-6):	
Approximately 69 months	Approximately 48 months (22 days/month)
Average of 604 employees, with peak at approximately 1,004 workers in Month 16	Average of 340 employees per month, with peak at approximately 500 employees in months 19 through 22.
Operation and maintenance period and workforce:	No change to the approved duration of the operation and maintenance period.
30 years (2010 PA/FEIS Section 2.2.5; Appendix A, p. 2-11) 221 workers (2010 PA/FEIS Section 2.2.4; Appendix A, p. 2-9)	The Modified Project would employ up to 20 permanent, fulltime personnel during daytime working hours (including at least 14 Production Technicians and 1 High-voltage Technician) plus temporary personnel as needed, during seasonal periods when panel washing is required.
Decommissioning activities (including site security and hazardous materials treatment considerations in the event of a temporary facility closure and, for permanent closure the implementation of a decommissioning plan and site reclamation plan) are described in 2010 PA/FEIS Section 2.2.5 (Appendix A, p. 2-11 et seq.)	No change.
Water Requirements:	
Construction Appendix A (pp. 2-7, 5-27, 5-28):	
Anticipated steady state condition of water use.	
Average water use per calendar day: approximately 645,000 gallons.	Total (maximum) construction water use would be reduced to 1,200 AF.
Total construction water use: approximately 4,100 acre-feet (AF).	Construction-related potable water needs would be reduced in proportion to reduced construction workforce.
Sources: Potable water to be trucked in and held in tanks. (Appendix A, p. 3.20-23). Construction process water to be sourced from on-site wells. A total of 10 new water supply wells (two per power block plus two additional wells adjacent to the central warehouse) would serve the Approved Project. Water for mirror washing would be demineralized on-site at one of the water treatment facilities. (Appendix A, p. 2-18)	A total of three water supply wells would be used, one of which already exists.
Operation and Maintenance approximately 600 acre-feet per year (AFY)	Operation and maintenance-related water use would be reduced to a maximum of 40 AFY.

TABLE 2-2 (Continued)
COMPARISON OF COMPONENTS OF THE APPROVED PROJECT AND MODIFIED PROJECT

Approved Project	Modified Project
Other Requirements (cont.)	
Wastewater Treatment:	
Construction (2010 PA/FEIS Section 2.2.3; Appendix A, p. 2-8):	No change to water treatment during construction.
Sanitary: chemical toilets; waste to be transported for off-site disposal by a commercial service.	
Industrial process: Any other hazardous wastewater produced during construction (e.g., equipment rinse water) would be collected by the construction contractor in portable water tanks and transported off site for disposal in a manner consistent with applicable regulatory requirements	
Operation and Maintenance (2010 PA/FEIS Section 2.2.2; Appendix A, p. 2-5):	No change to operation and maintenance related treatment of sanitary wastewater. Industrial process water treatment ponds would be reduced to two 6-acre ponds.
Sanitary: septic system/leach field: approximately 22,000 square feet (0.51 acre);	
Industrial process: eight 4-acre evaporation ponds	
Nighttime Lighting:	
Restricted to areas required for safety, security, and operation. Exterior lights would be hooded/shielded, and lights would be directed on site and/or toward the work area so that off-site light or glare would be minimized.	No change to construction or operation nighttime lighting.
Closure of Open Routes (Routes 661085, 66113, and 66115) comprising approximately 4.5 miles of public access	Affected portions of Routes 661085, 661113 and 661115 would remain closed; however, public access would be provided through the site to the north.

SOURCES: Appendix A; NextEra Blythe Solar, 2013a; CEC Staff, 2013.

Solar Panel Arrays and Support Structures

The Modified Project would convert sunlight into direct current (DC) electrical energy using solar PV modules (also referred to as "panels"). PV modules can be mounted together in different configurations (also referred to "arrays") depending on the equipment selected. The proposed arrays primarily would be organized into approximately 2 MW blocks, with some additional arrays configured in smaller capacity blocks to utilize land space efficiently. Although the acreage of each block would depend on the technology, spacing, mounting equipment, and other design criteria subject to change in detailed engineering, each block is expected to cover approximately 15 acres. Each block would consist of PV modules and a power conversion station (PCS) that includes inverters and transformers to convert the DC electricity to alternating current (AC) electricity for transmission across the grid.

Solar energy PV technologies are continuing to advance at a rapid rate, and the Grant Holder is continuing to evaluate the evolving benefits of various options at this time. Each option is described below, and the associated impacts are evaluated in this EIS assuming a "worst case" scenario for purposes of analyzing impacts (i.e., the specific PV technology with the greatest impact depending on resource area). In this way, the best information available during final design can inform decisions about the exact technology, arrangement and nature of the PV system to be used if the requested Level 3 variance is approved.

Different materials display different energy generation efficiencies; higher efficiency panels produce more electricity per given area, but generally cost more per panel area. Materials commonly used for PV solar cells include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride (CdTe), and copper indium selenide/sulfide. Several of the PV cells currently available are manufactured from bulk materials that are cut into very thin wafers, i.e., between 180 to 240 micrometers thick. Others are constructed from thin-film layers. The Grant Holder is considering the installation of both polycrystalline silicon and CdTe solar cells. Both technologies are proven and viable for utility-scale PV plants.

Solar Panels

The system would incorporate high-efficiency commercially available solar PV panels that are Underwriters Laboratory (UL)-listed or approved by another nationally recognized testing laboratory. By design, the solar PV panels would absorb sunlight to maximize electrical output and use anti-reflective glass. These panels would be protected from impact by tempered glass, and would have factory-applied ultraviolet (UV) and weather-resistant "quick connect" wire connectors.

A CdTe solar panel uses solar cells constructed in a thin semiconductor layer (also known as a "thin film") to absorb and convert sunlight into electricity. The Grant Holder is considering the use of thin-film CdTe panels as one of its technology options. If thin-film CdTe panels are used, the Grant Holder would ensure that the vendor offers a PV module recycling program through which any module may be returned for recycling.

Silicon is the traditional material choice for PV solar cells, and the Grant Holder is considering polycrystalline silicon PV modules for use at the Modified Project.

Since the electrical ratings for the panels, inverters, and other PV equipment vary based on the manufacturer, the DC collection design also varies depending on the chosen technology. The PV modules would be electrically connected in series, and groups of these series-connected modules would be connected by wire harnesses to the combiner boxes. The combiner boxes in turn would feed an inverter in the PCS via DC cables. The PCS would be located within each block, and would be on concrete vaults, slabs, or pier foundations. The PCS would include the inverters and step-up transformers (SUTs) required for converting the low-voltage DC electricity to medium-voltage AC electricity.

The transformers in the PCS step up the voltage from the inverter AC output to that required by the on-site AC collection system. The AC collection system would conduct the electricity from each PCS at 34.5 kV to the feeder circuit breakers and the 34.5/230 kV unit SUTs for each 125 MW or 110MW unit. Overhead or underground lines would then conduct the electricity from the SUTs to the on-site switchyard. The electricity would then be routed to the CRS via the gen-tie line.

Support and Mounting Structures

The Grant Holder plans to use either a fixed-tilt ground mount or a single-axis tracking system for the structures that support the PV modules.

If the Grant Holder chooses a fixed-tilt system, it would utilize a metal framework structure or support table (“rack”) on which the PV modules would be mounted in a permanent “fixed” position tilted towards the south at approximately 30 degrees to optimize production throughout the year without any mechanical movement. A fixed-tilt system can generally follow the slope of the terrain, which reduces grading requirements. The support posts may vary in height above the ground surface to accommodate the variations in terrain. The total height of the structures, including panels, would be approximately 9 feet depending on the racking system configuration and tilt angle selected.

Another option, a single-axis tracking system, optimizes production by rotating the panels to follow the path of the sun throughout the day. The central axis of the tracking structure would be oriented north to south and would rotate the panels from east to west while limiting self-shading between rows. The system would utilize a method called “back-tracking,” which consists of rotating the panels back toward a more horizontal position to avoid shadowing between the adjacent panels in the early morning and late afternoon hours of operation.

Each tracking assembly would consist of one or two steel torque tubes, supported by posts, on which the frames for the PV panels would rest. Each tracker would hold 30 to 90 PV panels mounted on this metal framework structure; the wide range is due to the variation in tracker and module technology. The steel structure would be able to withstand high-wind conditions (up to 90 miles per hour), site-specific wind gust and aerodynamic pressure effects, and seismic events.

Either of two types of single-axis tracker systems could be selected for the Modified Project. Tracker Option 1 is a “ganged system” that would use one motor to control multiple rows of PV modules through a series of mechanical linkages and gearboxes. By comparison, Tracker Option 2,

a stand-alone tracker system, would use a single motor and gearbox for each row of PV modules. A single-axis tracking system optimizes production by rotating the panels to follow the path of the sun throughout the day. The central axis of the tracking structure is oriented north to south and is constructed to rotate the panels east to west while limiting self shading between rows.

The drive unit typically consists of a bi-directional AC motor or a hydraulic system utilizing biodegradable fluid. The drive unit would be connected to an industrial-grade variable-frequency drive that translates commands from the control computer.

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

Both trackers and fixed-tilt mounting systems are supported by steel posts spaced at approximately 10 feet apart and installed in a variety of ways. The most prevalent foundation design uses vibration-driven posts inserted into the ground to a typical depth of 8 to 10 feet below grade. Typical installations of this type are constructed using steel piles or concrete foundations. Steel piles may be driven, screwed, or grouted. Driven steel pile foundations typically are galvanized and used where high load bearing capacities are required. The pile is driven using a hydraulic ram where up to two workers are required. Screw piles, if used, would be driven into the ground with a truck-mounted auger requiring two or three workers.

The choice of foundation design is dependent on geotechnical information about the soil and the mounting structural design. Although some geotechnical investigation already has been conducted for the Approved Project, additional geotechnical work would be required for the Modified Project in order to collect data for finalization of foundation designs. This work would be performed prior to site mobilization in order to provide data in time for detailed design work to commence. The additional work would consist of up to 200 borings and test pits scattered throughout the site. Access to these locations would be via temporary two-track paths. Total expected surface disturbance would be approximately 30 acres with soil disturbance due to the pits and bores of approximately 300 cubic yards. Impacts of this drilling and test pit work, which constitutes the geotechnical work, are considered in Chapter 3 as part of the overall project. A full geotechnical work plan addressing any environmental impacts or issues that may be identified in the analysis would be developed for and approved by the BLM prior to the work being conducted.

Once mounted on a foundation, the bottom of each solar module array would be approximately 1.5 to 2 feet above ground at a minimum, while the top would be at approximately 6 to 10 feet above grade at a maximum. As the solar modules move throughout the day for the tracking option, these heights would vary slightly during the course of a typical day.

Panel Access

The spacing between the rows of tracking units or fixed mounts is dependent on site-specific features and would be identified in the final design. The Grant Holder's preliminary configuration indicates the spacing allows for at least 10 feet of clearance for maintenance vehicles and panel access.

In addition, 24-foot and 16-foot-wide internal roads would provide access to and among the solar panel arrays. This road surface would be scarified, moisture-conditioned, covered with aggregate base, and compacted. Parking would be available at points along these internal roads and at the PCS locations. These roads would be used only as necessary during operation and maintenance activities.

Anemometers

Depending on the final design of the equipment, the solar arrays may be installed with tracker anemometer towers, which measure and communicate wind speed data to the tracker controllers for solar array panel tracker positioning in the event of high winds. Each tower would measure approximately 30 feet in height, and would be installed within the solar plant arrays. There would be approximately two anemometer towers for every 125 MW unit.

Solar Field DC Distribution and Power Conversion

DC Distribution

The PV modules would be electrically connected in series by wire harnesses that conduct DC electricity to combiner boxes. Each combiner box would collect power from several rows of modules and feed a PCS via cables placed in covered underground trenches (or within aboveground cable trays or conduits in limited circumstances where underground trenching is determined not to be practical). The DC trenches would be approximately 3 feet deep and from 1.5 to 2.5 feet wide. The bottom of each trench would be filled with clean fill surrounding the DC cables and the remainder of the trench would be back-filled with native soil and compacted to 90 percent (95 percent when crossing under roadways). Power screeners could be used on site for a limited period of time (less than 1 year) to extract the required clean fill from native soils for use as bedding material in the trenches. A power screener is a motorized piece of equipment that uses moving screens to filter soils to a particular granularity.

AC Collection

Each PCS comprises an inverter package consisting of multiple inverters connected to adjacent transformers. An overhead shade would cover the inverters or a common equipment enclosure would include multiple inverters. The individual inverter packages would be approximately 7 feet tall, and the transformer exterior to the enclosure would be approximately 6.5 feet tall. The overhead shade would be 10 to 12 feet tall. The equipment enclosure, if utilized, would be up to approximately 35 feet long by 10 feet wide by 10 feet tall. In the PCS, the inverters would change the DC output from the combiner boxes to AC electricity. Integrated with the inverter, a data acquisition system (DAS) would utilize a data logger and sensors to record AC power output. Other integrated components would include equipment to record weather conditions, including ambient temperature measured in degrees Celsius (°C), incoming solar radiation measured in

watts per square meter (W/m^2), and wind speed measured in meters per second (m/s). The DAS would enable system data transfer and performance monitoring via the proposed O&M facility.

The resulting AC current from each individual inverter would be routed through underground AC cables (or within above ground conduits in limited circumstances where underground trenching is determined not to be practical) to an oil-filled, medium voltage, step-up transformer positioned within secondary containment. Based on preliminary design, the 265 volt output from an inverter would be stepped up (increased) to the desired AC collection system voltage of 34.5 kV by the transformer. The medium-voltage transformer would be placed on a pre-cast concrete pad delivered by flatbed truck during construction.

Multiple PCS blocks (approximately 10 MW total) would form a lateral configuration and transmit the AC power at 34.5 kV via aboveground double circuit monopoles or underground lines in covered trenches (or within above ground conduits in limited circumstances where underground trenching is determined not to be practical). Lateral conductors would be combined into an aboveground or underground feeder line (24 to 26 MW) that would transmit the AC power to the feeder circuit breakers and step-up transformers. Each transformer would step up the voltage to 230 kV before transmitting the power to the on-site switchyard in either aboveground or underground lines. As applicable, AC trenches would be approximately 3 feet deep and from 8 inches to 6.5 feet wide and also would be used to house fiber optic cables for communication. The bottoms of the trenches would be filled with sand surrounding the fiber optic cables, and the remainder of the trench would be back-filled with native soil and compacted.

The on-site electrical collection system is designed to minimize electrical losses within the solar plant site prior to delivery to the on-site switchyard.

Switchyard

The 2010 PA/FEIS describes a central, internal, 250,000-square-foot (5.74-acre) switchyard that would include a series of switches and circuit breakers that switch or provide disconnect service for the electricity before it is routed to the CRS via the gen-tie line (see, e.g., Appendix A, pp. 2-2, 2-4, 2-5). The Modified Project would modify the switchyard to accommodate the change in technology and relocate it to an area between Unit 1 and Unit 4, adjacent to the modified gen-tie alignment within the solar plant site. The Modified Project switchyard would be 6.9 acres in area.

Operation and Maintenance Facility

The 2010 PA/FEIS for the Approved Project describes an approximately 10,000 square foot administration building that would be shared among all units within the solar plant site (see, e.g., Appendix A, p. 2-5) and analyzes related environmental consequences throughout its Chapter 4. The Modified Project would reduce the square footage of a structure (referred to by the Grant Holder as an “operation and maintenance facility”) that would provide the same functions as the approved administration building.

As described in Section 2.5.2 of the POD Supplement (NextEra Blythe Solar, 2013a), an approximately 3,000-square-foot operation and maintenance building would be located near the center of the site and would be shared for services to all units. The building would provide an

administration area, a work area for performing minor repairs, and a storage area for spare parts, transformer oil, and other incidental chemicals. The administration area would be air conditioned and include offices, conference rooms, a break room, rest rooms, and locker rooms with showers.

The building would be supported on reinforced concrete mat foundations or individual spread footings as determined during detailed design. Excavation for the footings would be approximately 2 feet deep. Excavation within the perimeter of the building would be approximately 1 foot deep. An aggregate or stone base would be laid after excavation. The floor would consist of a 6-inch reinforced concrete slab. Concrete for this slab would come from the Blythe area.

The operation and maintenance building would be a pre-engineered metal building approximately 17 feet high at its peak with a neutral-colored metal siding and roof consistent with BLM color treatment requirements. The building's maintenance area would include roll-up doors to provide equipment access as well as personnel access doors. An approximately 10,000-square-foot parking area would be provided at the operation and maintenance building.

Other Site Improvements

Weather Station

The 2010 PA/FEIS describes structures and facilities that would be included in the solar plant site for the Approved Project, including a weather station in each of the approved power blocks, in Section 2.2.2 (p. 2-3) and analyzes related environmental consequences throughout its Chapter 4. The approved weather station is not affected by the Modified Project (NextEra Blythe Solar, 2013a). No changes to the Approved Project are requested in the Level 3 variance request regarding this infrastructure.

Temporary Construction Workspace, Yards, and Staging Areas

Temporary construction facilities would be located on site during construction for materials storage, equipment storage, and field fabrication facilities; a temporary construction office complex also would be built. As described in Section 2.5.6 of the Grant Holder's POD Supplement (NextEra Blythe Solar, 2013a), these facilities would be consistent with the Approved Project. See, for example, Appendix A, pages 2-4, 2-5, 4.16-3, 4.16-4 and 4.16-6, which describe and analyze impacts associated with areas required for the staging and laydown of equipment, materials, and supplies as well as related parking. See also 2010 PA/FEIS Section 4.18 (Appendix A, p. 4.18-6), which analyzes impacts associated with construction lighting.

Drainage Improvements

The 2010 PA/FEIS describes the approved drainage control improvements, which include engineered drainage channels and associated diffusers to intercept off-site flows and redirect them around the site and accept directed on-site flows for diffusion and discharge in a manner intended to mimic existing sheet flow conditions downstream of the site; a berm; and roadway dips (also known as "Arizona crossings") (see, e.g., Appendix A, pp. 4.19-7, 4.19-10). The Modified Project would eliminate the major drainage channels, but may require smaller drainage features (NextEra Blythe Solar, 2013a).

Instead of intercepting, capturing, and redirecting surface flows around the site, the Modified Project would use site preparation techniques that allow water to sheet flow across the site. The final site plan would be based on a detailed topographic survey of the site, as well as detailed hydrologic and topographic studies that would be performed as a part of the permitting and engineering design process. Based on a preliminary grading plan, the Grant Holder commissioned a hydraulic evaluation. The final design would implement site design and protective erosion and drainage control design measures during construction and operation that would minimize dust and erosion. Stormwater flow would be managed to prevent downstream erosion and channelization. While the final grading design has not been completed for the Modified Project, the amount of grading would be considerably less than for the Approved Project, which would have completely eliminated all existing washes and floodplains within the site boundary by grading approximately 7,000 acres (Appendix A, p. 4.19-8). Additionally, erosion control design features (such as stabilization of the heavily used construction entrance area and installation of silt fences to control erosion along neighboring properties) and other protective measures (including minimizing disturbance and compaction to the extent feasible) proposed as part of the Modified Project would enable existing drainage patterns to be maintained at the project site and in off-site downstream areas. A fraction of 1 percent of the total surface area of the site would be covered with impervious surfaces.

2.2.1.2 Linear and Other Structures and Facilities

As summarized in Table 2-2, the Modified Project proposes no revisions to the approved means of site access or the approved gen-tie line, interconnection at Southern California Edison's Colorado River Substation, telemetry and telecommunications infrastructure, distribution power line, or removal of the existing natural gas line that has been abandoned in place on a portion of the solar plant site. The Modified Project would not construct, operate, or maintain the approved new natural gas line because this component would not be necessary to the operation and maintenance of a PV facility.

2.2.1.3 Water Supply and Use

Water Supply

The Modified Project would reduce the number of groundwater wells to be constructed on-site from 10 to 3, one of which was drilled as part of initial construction activities in connection with the Approved Project. No other changes are proposed to the approved groundwater wells: groundwater would be sampled, tested, and monitored in accordance with applicable law and approvals. As indicated in Table 2-2, the Level 3 variance request does not affect the approved sources of potable water during construction.

Construction-related Water Use

The Modified Project would reduce the total amount of water used for construction from approximately 4,100 AF as approved (Appendix A, p. 3.20-33) to approximately 1,200 as modified by the Level 3 variance request. No other changes to overall construction-related water use are proposed. Primary uses of water during construction would be the same for the Modified Project as for the Approved Project: compaction and dust control, with smaller quantities for preparation of

the concrete required for building foundations, sanitary needs, and other minor uses. Water would be stored on-site during construction using either temporary construction ponds or tanks.

The Modified Project also would reduce the amount of potable water needed during construction to approximately 10,000 gallons per month (approximately 0.5 AFY), varying seasonally and by work activities. Based on the reduction in required workforce, this is anticipated to be approximately half of the potable water that would be required to construct the Approved Project.

Operation and Maintenance-related Water Needs

The Modified Project would reduce the amount of water needed during operation and maintenance from approximately 600 AFY as approved (Appendix A, p. 2-18) to a maximum of 1,200 AF over 30 years (an average of 40 AFY). Operation and maintenance-related water use for the Modified Project is anticipated to be needed for the purposes and in the amounts indicated in Table 2-3, including water use for panel washing and dust control (the proposed PV technology requires no water for the generation of electricity).

TABLE 2-3
OPERATION AND MAINTENANCE-RELATED WATER USE

Water Use		PV Module Cleaning[a]				Misc O&M Total[b]	Potable Total[c]
		Per Unit		Total Plant			
		Min	Max	Min	Max		
Annualized Average	Rate (gpd)	7,000	7,800	28,000	32,000	3,500	450
Estimated Peak	Rate (gpd)	24,000	26,900	58,400	64,900	20,000	500-600
Estimated Annual	Use (AFY)	7.5	9.0	25	35	4.5	0.5

NOTES:

[a] Water consumption based on the volume of water required to wash the panels approximately twice per year
[b] Miscellaneous O&M activities include fire water, dust suppression, etc.
[c] Potable water used based on 7-day work week with 20 on-site personnel

SOURCE: NextEra Blythe Solar, 2013a (Table 2-2)

The Level 3 variance request does not propose to revise the existing approval for on-site treatment of groundwater for potable and other uses. See, for example, 2010 PA/FEIS Chapter 2 (Appendix A, pp. 2-4, 2-15), which identifies reverse osmosis (RO) and demineralized water system components as well as a water filter and clarifier system as “major” components of the Approved Project. The water treatment area for the Modified Project would be constructed on up to 3 acres (excluding any necessary evaporation ponds) near the middle of the solar plant site. An enclosure, if used, would be a pre-fabricated steel building on a concrete foundation with a maximum height of 17 feet. Wastewater discharge from the treatment facility would be non-hazardous, have a maximum quantity of up to 60 gallons per minute (gpm), and be produced primarily from the RO reject. Treatment of the wastewater discharge is discussed below in Section 2.3.1.3.

There would be three tanks on-site for the storage of the raw and fire water, potable water, and demineralized water for the Modified Project. The raw water tank storage capacity also would

provide the fire water supply. This tank would hold approximately 20,000 gallons for the Modified Project, which is 880,000 gallons less capacity than the approved 1,000,000-gallon service/fire water storage tank (Appendix A, p. 2-16). It would be constructed of bolted or welded steel and painted with a non-reflective coating to blend with the surrounding environment. The potable water tank would be of similar construction with a maximum volume of 7,500 gallons. The demineralized water tanks would have a total capacity of up to 100,000 gallons (20,000 gallons less than the Approved Project as described on page 2-16 of Appendix A); they would store water to be used for panel washing and be of stainless steel construction painted with a non-reflective coating.

The Level 3 variance request does not propose to revise the existing approval for the use of a BLM-approved dust suppressant and/or water to control dust (see, e.g., Appendix A, pp. 2-16, 3.20-24).

Decommissioning and Site Reclamation-related Water Needs

The Level 3 variance request does not propose to revise the fact that decommissioning and reclamation plans will be prepared and put into effect when permanent closure of the BSPP occurs to ensure compliance with applicable laws, public health and safety, and protection of the environment (see Appendix A, p. 2-12). For example, Best Management Practices (BMPs) would be followed to prevent erosion and sedimentation, non-stormwater discharges, and contact between stormwater and potentially polluting substances as well as to control dust during demolition and grading activities in accordance with the requirements of the Mojave Desert Air Quality Management District (MDAQMD). It is anticipated that the decommissioning and site reclamation would be staged in phases, allowing for a minimal amount of disturbance and requiring minimal dust control and water usage. Water usage during decommissioning and site reclamation would not exceed operational water usage.

2.2.1.4 Waste and Hazardous Materials Management

Wastewater Treatment

Two separate wastewater collection systems would be provided for the Modified Project: one for sanitary wastes, and another for the collection of wastewater from panel wash water treatment operations.

The Grant Holder proposes no changes to the approved methods of treatment of sanitary wastewater. 2010 PA/FEIS Section 2.4 (Appendix A, p. 2-19) estimated that 11,000 gallons of sanitary wastewater would be produced per day by the Approved Project. It is anticipated that the Modified Project would generate considerably less volume than the Approved Project due to the reduced duration of construction (when on-site employment levels are highest) as well as the reduced number of construction workers and permanent employees (see Table 2-2).

The industrial processes required for the Modified Project also are expected to generate less wastewater than would be generated by the Approved Project. As a result, the Modified Project would reduce the number and maximum capacity of the approved on-site evaporation ponds required for disposal of the wastewater from eight 4-acre ponds (up to 32 acres total) (Appendix A, p. 2-20) to two 6-acre evaporation ponds (up to 12 acres total). The Level 3

variance request does not propose to change the proposed design, construction, or operation and maintenance of the evaporation ponds, including the fact that, as approved, they would be netted and monitored to the extent required by the regulatory agencies (Appendix A, p. 4.11-38).

Waste Management and Hazardous Materials

The Modified Project would not add new or increase the volume of approved non-hazardous solid, hazardous solid, or liquid waste streams relative to the Approved Project. See Appendix A, p. 2-8; see also, McCoy Solar LLC, 2011a.

The Modified Project would, however, eliminate the approved use of HTF, HTF system components (e.g., the HTF heat exchanger, HTF expansion vessel and overflow vessel, HTF ullage system, and related piping), as well as the Land Treatment Unit that was approved to bioremediate HTF-contaminated soil (see, e.g., Appendix A, pp. 2-11, 2-15, 2-20). As described and analyzed in the 2010 PA/FEIS, the approved HTF is highly flammable (Appendix A, p. 4.11-9) and anticipated to cause toxic emissions including benzene, toluene, and phenol, among others (Appendix A, pp. 4.11-11, 4.11-14).

The Modified Project also would reduce the volume of sanitary wastewater, non-hazardous wastes, and hazardous wastes relative to the approved levels due to the reduced overall size of (and materials required for) the project and fewer numbers of construction workers and employees (see generally, Table 2-2). The Modified Project would not change any potential Class III landfill or permitted Class I hazardous waste landfill destinations relative to the Approved Project.

2.2.1.5 Vegetation Management and Fire Protection

Vegetation Management

The approved weed management plan would continue to be implemented as approved; the Grant Holder and the BLM will review the approved weed management plan prior to construction to determine if changes are warranted. To decrease the risk of fire during operation and maintenance of the Modified Project, all vegetation underneath the solar panels would be managed consistent with CDCA Plan multiple use class requirements applicable to the approved site, which may include use of a BLM-approved herbicide in accordance with guidance provided in the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (Herbicide FPEIS) and the *Final Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report* (BLM, 2007).[3]

[3] The ROD associated with the Herbicide FPEIS (72 FR 57065-01), published October 5, 2007, outlines the herbicides that are approved for use on public lands, including 14 herbicides with the following USEPA registered active ingredients: 2, 4-D, bromacil, chlorsulfuron, clopyralid, dicamba, diuron, glyphosate, hexazinone, imazapyr, metsulfuron methyl, picloram, sulfometuron methyl, tebuthiuron, and triclopyr. The ROD also identifies the states where the active ingredients are approved for use based on state registration requirements. It also identified six herbicide active ingredients that are not permitted for use BLM lands unless a need is shown by the BLM and updated risk assessments for human health and ecological risks are assessed. The six precluded active ingredients are: 2, 4-DP, asulam, atrazine, fosamine, mefluidide, and simazine.

Fire Protection

The Modified Project proposes several changes to the approved fire protection and emergency response systems and controls (see, e.g., Appendix A p. 2-18). The fire protection piping networks, as well as the foam generators described for the Approved Project would be eliminated under the Modified Project.

During construction, a water truck or other portable, trailer-mounted water tank would be kept on-site and available to workers for use in extinguishing small man-made fires. Fire watches would be required during hot work on-site. An Emergency Action Plan (EAP) would designate responsibilities and actions to be taken in the event of a fire or other emergency during construction. The EAP, including fire prevention and suppression, and a worker safety plan would be provided to BLM and local fire departments for approval before the receipt of a Notice to Proceed. During operation and maintenance, fire protection systems for the solar plant site would include a fire protection water system for protection of the operation and maintenance building, including portable fire extinguishers and possibly hydrants. The fire protection water system would be supplied from an approximately 20,000 gallon raw and fire water storage tank located on the solar plant site near the operation and maintenance area.

Adherence to all applicable codes and standards such as the California Building Code (CBC), National Fire Protection Association (NFPA), and the Solar Photovoltaic Installation Guideline by the California Department of Forestry and Fire Protection (CAL FIRE) would ensure that the most current standards for fire protection equipment and materials are met; water would be stored on site for fire protection purposes; the operation and maintenance building and other structures would be equipped with standard fire protection systems and shutoff capabilities in the event of a fire; and fire hydrants could be placed at intervals throughout the project site. Circuit breakers, surge arresters, and lightning protection also would be provided. Further, a Data Acquisition System (DAS) would provide system monitoring and access to system information in case of an emergency, and the marking and labeling of the equipment would provide warning and emergency guidance, particularly for the disconnect switches, conduits, raceways, enclosures, cable assemblies, combiner boxes, and junction boxes.

2.2.2 Construction

2.2.2.1 Site Preparation

Vegetation would be cleared from roadways, access ways, and where concrete foundations are used for inverter equipment, substations, and the operation and maintenance building. Vegetation also would be cleared for construction of any required drainage controls. Organic matter would be mulched and redistributed within the construction area (except in trenches and under equipment foundations). Plant root systems would be left in place to provide soil stability except where grading and trenching are required for placement of solar module foundations, underground electric lines, inverter and transformer pads, road and access ways, and other facilities. During the site clearing process, the site would also be cleared of refuse, as necessary. Refuse materials encountered would be recycled or disposed.

Cut and fill depths across the site would be minimized, and it is expected that no import or export of soil material would be required. Any excess cut would be dispersed on site at any localized low spots within the solar field so that the total amount of cut and fill would be balanced on site. The Grant Holder's grading estimates are presented in Table 2-4.

TABLE 2-4
MODIFIED PROJECT CUT AND FILL VOLUMES

Unit	Cut (cy)	Fill (cy)
1	181,400	129,400
2	113,700	91,000
3	114,000	91,200
4	99,400	79,500
Total	**508,500**	**391,100**

NOTE:

[a] Excess cut would be dispersed on site at any localized low spots within the solar field that do not significantly impact surface hydrology.

[b] The cut volumes include the soil that would be over excavated, scarified and left in place for all roads per our interpretation of the Kleinfelder Preliminary Geotechnical Investigation dated September 23, 2009. The volume of cut that would be scarified and left in place accounts for 334,400 cubic yards of the total 508,500 cubic yards of cut volume.

SOURCE: NextEra Blythe Solar, 2013

Select locations with local areas of highly variable terrain may be prepared using conventional farming equipment including tractors with discing equipment and vibratory rollers. This technique is referred to as "disc and roll." With this approach, rubber-tired farming tractors towing disc harrow equipment would disc the top 2 to 3 inches of soil. A water truck would follow closely alongside the tractor to moisten the soil to minimize fugitive dust emissions. The tractor may make several passes to fully disc the vegetation into the topsoil, preserving the underground root structure, topsoil nutrients, and seed base; however, once the soil has been wetted on the first pass, additional water would not be needed for subsequent passes. A drum roller would then be used to flatten the surface and return the soil to a compaction level similar to the preconstruction stage. In dispersed sections of the solar array field, there would be limited use of scrapers to perform micrograding. This technique is referred to as "isolated cut/fill." This technique would only be utilized in areas where existing grade cannot accommodate perimeter fencing, roads, or other equipment or structures. In general, portions of the site would be contoured to a smooth grade; the macro-level topography and storm water drainage would remain unchanged.

Grading of an area would take place shortly before trenching and post installation are ready to begin in order to minimize the area of open, uncovered ground present at any one time during construction.

2.2.2.2 Solar Array Assembly and Construction

Depending on the final PV technology and vendor selected, the design of the tracker support structures could vary. Typical installations of this type are constructed using steel piles or concrete

foundations. Steel piles may be driven, screwed, or grouted. Driven steel pile foundations typically are galvanized and are used where high load-bearing capacities are required. The pile is driven using a hydraulic ram with up to two workers required. Soil disturbance would be restricted to the pile insertion location with temporary disturbance from the hydraulic ram machinery, which is about the size of a small tractor. Screw piles, if used, would be driven into the ground with a truck-mounted auger requiring two or three personnel. Screw piles create a soil disturbance footprint similar to driven piles. Grouted steel piles, if used, would require pre-drilling with auger equipment so that the pile could be inserted into the cleaned hole. The pile then would be grouted into place from bottom to top until grout flows out of the top of the hole. Soil disturbance would be the same as the previous steel pile descriptions with additional disturbance from the soil removal and insertion of grout at the pile location. Concrete foundations avoid ground penetration by withstanding the design loads from the weight of the concrete itself. Concrete requires time to cure and can be pre-cast and transported to the site or poured in place for installation. Concrete foundations reduce the ground penetration, but increase the permanent disturbance.

The design method and installation time of the support structures would depend on the support structure and block design with driven piles being the fastest installation method. Final construction and installation details would be determined in the detailed design of the Modified Project.

Solar PV panels would be manufactured off-site and shipped to the site ready for installation. Concrete pads for the drive motors would be pre-cast and brought to the site via flatbed truck. Once most of the components have been placed on their respective foundations, the electricians and instrumentation installers would run the electrical cabling throughout the solar field. After the equipment is connected, electrical service would be verified, motors checked, and control logic verified. The various hydraulic systems would be charged with their appropriate fluids and startup testing would proceed. As the solar arrays are installed, the balance of the plant would continue to be constructed and installed and the electrical power and instrumentation would be placed. Once all of the individual systems have been tested, integrated testing of the Modified Project would occur.

2.2.2.3 Construction Schedule and Work Force

Work would be completed in phased stages, as shown in Figure 2-5. Construction of all phases is anticipated to take approximately 48 months from the commencement of the construction process to its completion, 21 months shorter than the Approved Project construction period. Because the construction may proceed in phases, construction of the units may proceed simultaneously or, alternatively, consecutively with or without a hiatus between phases.

During construction, the workforce is expected to average approximately 340 employees, with a peak workforce of approximately 500 employees during Months 19 through 22 of the construction period. The construction workforce would be recruited from within Riverside County and elsewhere in the surrounding region to the extent practicable.

2.2.2.4 Construction Equipment and Vehicles

Most construction equipment and vehicles would be brought to the Project site at the beginning of the construction process during construction mobilization and would remain on site throughout

the duration of the construction activities for which they would be used. Generally, the equipment and vehicles would not be driven on public roads while in use for the project.

In addition to construction worker commuting vehicles, as discussed above, construction traffic would include periodic truck deliveries of materials and supplies, recyclables, trash, and other truck shipments. Truck access to the site would be from I-10 and then via Mesa Drive Road to Black Rock Road. Construction truck deliveries and shipments would typically avoid the peak traffic hours in the morning and evening, so it is unlikely that deliveries would represent a substantial increase in traffic volumes during peak commuting hours. Materials would typically be delivered starting two weeks before the start of the associated task with the exception of electrical gear (PCSs, polyvinyl chloride, etc.), which would be drop-shipped just prior to installation.

2.2.3 Operation and Maintenance

2.2.3.1 Operation and Maintenance Workforce

As summarized in Table 2-2, the Modified Project proposes no change to the approved 30-year duration of the operation and maintenance period but would require far fewer workers during this timeframe: whereas approximately 221 workers would be required to operate and maintain the Approved Project (2010 PA/FEIS Section 2.2.4; Appendix A, p. 2-9), only 15 to 20 permanent, full-time personnel would be required for the Modified Project with additional temporary personnel to be employed, as needed, during seasonal periods when panel washing is required.

Similar operation and maintenance tasks would be required for the Approved Project and Modified Project, including monthly visual inspections and performance of annual (minimum) preventive maintenance. In accordance with United States Department of Labor, Occupational Safety and Health Administration (OSHA) safety regulations, at least two qualified personnel would be present during all energized electrical maintenance activities at the facility. Site security systems would be monitored regularly by on-site personnel and an off-site 24-hour Remote Operations Center.

2.2.3.2 Automated Facility Control and Monitoring System

Like the approved data control system (see Appendix A, p. 2-9), the Modified Project would have a facility control and monitoring system. The Modified Project's system would have two primary components: an on-site SCADA system and the accompanying sensor network. The on-site SCADA system would offer near real-time readings of the monitored devices, as well as control capabilities for the devices where applicable. Off-site monitoring/data trending systems would collect historical data for remote monitoring and analysis. For example, personnel at the Remote Operations Center would provide continuous 24/7/365 monitoring coverage of project facilities and would respond to real-time alerts and system upsets using advanced monitoring applications that reside on the servers in their network.

2.2.3.3 Panel Washing

PV panel washing would be performed by seasonal maintenance crews in the fall and spring, taking approximately 20 to 40 days to complete each unit. The exact panel washing system has

not been determined; several types of systems are currently available. Most involve spraying filtered water onto the modules from a portable tank mounted in the bed of a pickup truck; brushes, rods, or circular cleaning heads may also be used to remove debris. Surfactants would not be used in these procedures. The process water would be allowed to run off the modules and evaporate or percolate into the ground.

2.2.3.4 Road Maintenance

Paved roads would be maintained to preserve the asphalt surface from degradation. Maintenance would include seal coating the asphalt surface every 2 to 5 years to prevent decay and oxidization. Potholes or other damage would be repaired as soon as practical.

Unpaved roads would be maintained regularly to control the flow of water on and around the road, remove obstacles, and maintain a solid surface. Maintenance would be completed by conducting regular surveys to inspect the conditions of the road surfaces; blading, grading or compacting the road surfaces to preserve a minimally sloped and smooth planed surface; and applying dust palliatives or aggregate base as needed to reduce dust and erosion.

2.2.4 Decommissioning and Site Reclamation

The Modified Project proposes no revision of the approved ROW grant's 30-year term (with the potential for extensions). At that time, facilities and infrastructure would be decommissioned and dismantled and the site restored.

The principal materials incorporated into the PV arrays include glass, steel, and various semiconductor metals. The module production process is designed to minimize waste manufacturers employ the compound CdTe as the semiconductor material. CdTe is a stable compound consisting of cadmium (Cd) and tellurium (Te). Cd, produced primarily as a byproduct of zinc refining, is a known human carcinogen as an independent element; however, in module manufacturing the CdTe is safely sequestered for the over 30-year lifetime of the module, after which it is recycled for use in new solar modules or other new products. If the Grant Holder selects panels that incorporate CdTe, it would participate in the manufacturer's recycling program.

2.3 Alternative 2 - Denial of the Modified Project (the No Action Alternative)

Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would remain able to develop the Approved Project as modified by the March 7, 2013 voluntary relinquishment that left approximately 4,433 acres of the original ROW grant, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The existing ROW approval as modified by the March 7, 2013 relinquishment represents approximately 65 percent of the Approved Project from the 2010 PA/FEIS and 2010 ROD. All other aspects of the project with the partial relinquishment would be the same as the Approved Project (see Section 2.4.1). The CDCA Plan and the NECO Amendment to the CDCA Plan would remain as amended by the 2010 ROD for the

Approved Project. No further analysis or approvals would be required for BLM to issue a Notice to Proceed for this alternative.

2.4 Previously Considered Alternatives

The following alternatives were considered in the 2010 PA/FEIS (Appendix A). None of the alternatives or land use plan decisions analyzed in the 2010 PA/FEIS are being revisited for purposes of the Level 3 variance now under consideration; these summaries are provided for informational purposes only in order to facilitate comparison with previous BLM analysis of the BSPP.

2.4.1 Approved Project

As part of the 2010 PA/FEIS and 2010 ROD, the BLM analyzed and approved the construction, operation, maintenance, and decommissioning of a 1,000 MW solar thermal parabolic trough project on approximately 6,800 acres of BLM-administered lands (see Appendices A and B). The description and detailed analysis of the Approved Project are not repeated in this EIS; however, to provide context for the Modified Project, the impacts of the Approved Project are provided where relevant for purposes of comparison. The analysis of the Approved Project from the 2010 PA/FEIS is also used as the basis for the analysis in this Draft EIS of the effects of denying the Proposed Modification (Alternative 2).

2.4.2 No Project

As part of the 2010 PA/FEIS (Appendix A), the BLM analyzed a No Project/No Action Alternative that contemplated a scenario in which no solar development would occur on the BSPP site. There is potential that denial of the Level 3 variance request for a Modified Project could result in the Grant Holder relinquishing the existing ROW grant associated with the BSPP site. The impact analysis associated with the No Project Alternative in the 2010 PA/FEIS provides an analysis of the impacts associated with such an outcome, and has been incorporated by reference into this Draft EIS. Under that No Project scenario, the site would remain subject to the CDCA Plan and the NECO Plan amendments made through the 2010 ROD for the Approved Project (Appendix B) as further amended by the ROD for the Solar PEIS. Under the Solar PEIS ROD amendments, the site would be part of the Riverside East Solar Energy Zone where the BLM would prioritize the development of utility-scale solar energy development.

2.5 Agency Preferred Alternative

The BLM tentatively has identified the Modified Project as the Agency Preferred Alternative based on the analysis documented in Chapter 3 and summarized in Table 2-5. Briefly, the Modified Project would avoid or reduce impacts to vegetation and wildlife resources, cultural resources, soils, surface water resources, and other resources present within the areas not proposed for development compared to the Approved Project and Alternative 2. Additionally, it would reduce impacts on recreation, visual resources, and groundwater withdrawal.

TABLE 2-5
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Air Resources				
Construction and Decommissioning Emissions	Potential exceedances of state and federal AAQSs for PM10; Emissions would be decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10; Emissions would be increased compared to the Modified Project but decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10	None
Operation and Maintenance Emissions	Potential exceedances of state AAQSs for PM10; Emissions would be decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10; Emissions would be increased compared to the Modified Project but decreased compared to the Approved Project	Potential exceedances of state and federal AAQSs for PM10	None
Biological Resources – Vegetation				
Vegetation Community				
Desert dry wash woodland	26 acres	31 acres	213 acres	0 acres
Unvegetated ephemeral dry washes	3.3 acres	4.1 acres	8.7 acres	0 acres
Vegetated ephemeral streams[a]	265 acres	276 acres	371 acres	0 acres
Subtotal ephemeral drainages	*295 acres*	*312 acres*	*592 acres*	0 *acres*
Stabilized and partially stabilized dunes	0 acres	0 acres	58 acres	0 acres
Sonoran creosote bush scrub[b]	3,847 acres	4,123 acres	6,365 acres	0 acres
Disturbed habitat	0 acres	0 acres	0 acres	0 acres
Agriculture[c]	0 acres	0 acres	4.4 acres	0 acres
Developed	0 acres	0 acres	4.9 acres	0 acres
TOTAL	4,142 acres	4,435 acres	7,025 acres	0 acres
Special-Status Plants[d]				
Harwood's milk-vetch	248 individuals	248 individuals	637 individuals	0 individuals

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	Deny Proposed Modification	Approved Project	No Project
Biological Resources – Vegetation (cont.)				
Las Animas colubrine	0 individuals	10 individuals	55 individuals	0 individuals
Harwood's eriastrum	0 individuals	0 individuals	13 individuals	0 individuals
Abrams' spurge	2,185 individuals	2,185 individuals	0 individuals	0 individuals
ribbed cryptantha	0 acres/individuals	0 acres/individuals	58 acres (1.5 million individuals)	0 acres/individuals
winged cryptantha	0 individuals	0 individuals	0 individuals	0 individuals
Utah milkvine	62 individuals	87 individuals	621 individuals	0 individuals
desert unicorn plant	1,091 individuals	1,093 individuals	9 individuals	0 individuals
Biological Resources – Wildlife				
Wildlife Species or Species Group (habitat affected)				
Desert tortoise	4,070 acres	4,433 acres	7,027 acres	0 acres
Mojave fringe-toed lizard	0 acres	0 acres	50 acres	0 acres
Couch's spadefoot toad	0.13 acre	0.13 acre	0.13 acre	0 acres
Migratory birds	4,070 acres	4,433 acres	7,027 acres	0 acres
Golden eagle	4,070 acres	4,433 acres	7,027 acres	0 acres
Burrowing owl	4,070 acres	4,433 acres	7,027 acres	0 acres
Desert kit fox	4,070 acres	4,433 acres	7,027 acres	0 acres
American badger	4,070 acres	4,433 acres	7,027 acres	0 acres
Nelson's bighorn sheep	0 acres	0 acres	922 acres	0 acres
Desert tortoise	4,070 acres	4,433 acres	7,027 acres	0 acres
Mojave fringe-toed lizard	0 acres	0 acres	50 acres	0 acres
Couch's spadefoot toad	0.13 acre	0.13 acre	0.13 acre	0 acres
Migratory birds	4,070 acres	4,433 acres	7,027 acres	0 acres
Golden eagle	4,070 acres	4,433 acres	7,027 acres	0 acres
Burrowing owl	4,070 acres	4,433 acres	7,027 acres	0 acres

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Climate Change				
Construction total CO2e	54,615 metric tons	67,535 metric tons	103,900 metric tons	none
Operation annual CO2e	126 metric tons	9,613 metric tons	14,789 metric tons	none
Annual electricity generated	1,104,636 MWh	1,365,000 MWh	2,100,000 MWh	none
Operational CO2e per MWh	0.0001	0.0070	0.0070	none
Loss of Carbon Uptake (CO2e/year)	3,785 metric tons	4,123 metric tons	8,806 metric tons	none
Net Reduction in CO2e per year	395,924 metric tons	480,341 metric tons	736,524 metric tons	none
Cultural Resources				
Archaeological resources impacted	99 archaeological sites (solar site only)	103 archaeological sites (solar site only)	189 archaeological sites (solar site only)	No cultural resources impacted
Hazards and Hazardous Materials				
Minimum Amount of Hazardous Material Stored On-Site (Gas/Liquid/Solid)	262,670 ft^3 / 264,765 gallons / 4050 lbs.	Less than but similar to Approved Project	366,433 ft^3 / 1,345,510 gallons / n/a	None
Non-Hazardous Solid Waste Generated During Construction	41 cubic yards/week	Less than but similar to Approved Project	70 cubic yards/week	None
Hazardous Materials Specific to Technology	Cadmium telluride (if thin-film panels used)	Heat transfer fluid	Heat transfer fluid	None
Aviation Safety Hazards	Potential glint and glare from PV panels	Potential glint and glare from mirrored troughs	Potential glint and glare from mirrored troughs	None
Geologic Hazards	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	Minor risk from seismic hazards, subsidence and settlement, and hydrocompaction. Mitigated risk from corrosive soils	None
Site Security	Mitigated minor security risks; “low vulnerability” site	Mitigated minor security risks; “low vulnerability” site	Mitigated minor security risks; “low vulnerability” site	No impact

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

Resource or BLM Program Area	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
	Approve Proposed Modification	**Deny Proposed Modification**	**Approved Project**	**No Project**
Lands and Realty				
Impacts to existing authorized uses	None	None	None	None
Nonconformance with the CDCA Plan	None	None	None	None
Nonconformance with CDCA Plan MUC L guidelines	None	None	None	None
MUC L lands with use opportunities restricted	4,138 acres	4,433 acres	6,831 acres	0 acres
Mineral Resources				
Area unavailable for mineral resource extraction	4,138 acres	4,433 acres	6,831 acres	0 acres
Noise				
Construction and Decommissioning Noise	The worst-case daytime hourly construction L_{eq} could be distinguishable at the nearby residences, but would not be expected to cause an adverse reaction at the closest residence. This impact would be less severe than construction-related impacts that would be associated with the Approved Project.	The worst-case daytime hourly construction L_{eq} could be distinguishable at the nearby residences, but would not be expected to cause an adverse reaction at the closest residence. The impact would be essentially the same as for Modified Project, which would be less severe than construction-related impacts that would be associated with the Approved Project.	Construction noise would elevate the existing ambient noise level at the nearest residential receptor by 16 dBA, a considerable increase.	No impacts would occur.
Operation and Maintenance Noise	The worst-case daytime hourly operation and maintenance L_{eq} would be slightly lower than the Approved Project and Alternative 2, and would not be distinguishable at the nearby residences.	The worst-case daytime hourly operation and maintenance L_{eq} would be slightly higher than the Modified Project, but would not be distinguishable at the nearby residences.	The worst-case daytime hourly operation and maintenance L_{eq} would not likely be distinguishable at the nearby residences.	No impacts would occur.
Paleontological Resources				
Cut and Fill	0.9 million cubic yards	5.4 million cubic yards	8.3 million cubic yards	None

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Recreation				
Direct impacts on recreational resources	4,070 acres unavailable, access through the site would be maintained	4,433 acres unavailable, access through the solar plant site would not be allowed	6,831 acres unavailable, access through the solar plant site would not be allowed	None
Construction noise impacts on recreation	Less noise compared to Approved Project	Same as Approved Project	Construction noise would be temporary and not likely to affect recreational users	None
Construction dust impacts on recreation	Less dust would be generated than assessed for the Approved Project	Less dust would be generated than assessed for the Approved Project	Construction dust may temporarily affect the visual quality of the area and thereby degrade recreational experiences in the area	None
Construction traffic impacts on recreation	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily degrade recreational experiences in the area	None
Visual impacts on recreation	Lower visual profile than Alternative 2 and the Approved Project, and therefore reduced impacts to recreational experiences in the area	Lower visual profile than the Approved Project, but greater visual profile than Alternative 2. Therefore, greater impacts to recreational experiences in the area when compared to Alternative 1 and reduced impacts when compared to the Approved Project	Construction and operation of the solar plant would adversely affect the visual quality of the area and thereby degrade recreational experiences in the area	None
Socioeconomics and Environmental Justice				
Construction Jobs (direct, indirect, and induced)	628	640	1,066	0
Operation and Maintenance Jobs (direct, indirect, and induced)	24	177	295	0
Construction Annual Economic Benefit plus Tax Payments	$60,458,000	$120,885,000	$140,120,000	$0
Operation Annual Economic Benefit plus Tax Payments	$2,200,791	$18,120,000	$30,200,000	$0
Environmental Justice effects	No disproportionate effects	No disproportionate effects	No disproportionate effects	No effect

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Soil Resources				
Approximate acres disturbed, by soil unit	Rillito-Gunsight: 440 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 2,310 Rositas-Orita-Carrizo-Aco: 1,360	Rillito-Gunsight: 800 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 2,310 Rositas-Orita-Carrizo-Aco: 1,360	Rillito-Gunsight: 2,446 Vaiva-Quilotosa-Hyder-Cipriano-Cherioni: 3,058 Rositas-Orita-Carrizo-Aco: 1,490	0
Special Designations				
Impacts to Wilderness Areas and lands with wilderness characteristics	Visual impacts due to dust and the conversion of 4,070 acres of open space to solar field	Visual impacts due to dust and the conversion of 4,433 acres of open space	Visual impacts due to dust and the conversion of 6,831 acres of open space	None
Impacts to ACECs	None	None	None	None
Impacts to Wilderness Areas and lands with wilderness characteristics	Visual impacts due to dust and the conversion of 4,070 acres of open space to solar field	Visual impacts due to dust and the conversion of 4,433 acres of open space	Visual impacts due to dust and the conversion of 6,831 acres of open space	None
Transportation and Travel Management				
Construction traffic impacts on traffic flow	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily increase delays on area roads and at area intersections	None
Operation and Maintenance traffic impacts on traffic flow	Less construction traffic would be generated than assessed for the Approved Project	Less construction traffic would be generated than assessed for the Approved Project	Construction traffic may temporarily increase delays on area roads and at area intersections	None
Impacts of oversized or overweight trucks	Same as Approved Project	Same as Approved Project	Roadways could be damaged	None
Impacts of parking demand during construction	Same as Approved Project	Same as Approved Project	Parking demand would be accommodated on-site	None
Impacts of parking demand during operation and maintenance	Same as Approved Project	Same as Approved Project	Parking demand would be accommodated on-site	None

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Visual Resources				
Construction airborne dust	Less dust would be generated than assessed for the Approved Project	Less dust would be generated than assessed for the Approved Project	Construction dust may temporarily affect the visual quality of the area	None
Construction equipment and activities	Less equipment would be needed and the construction period would be shorter than assessed for the Approved Project	Less equipment would be needed and the construction period would be shorter than assessed for the Approved Project	Construction operations, including equipment and associated activities would contrast with the existing natural scenery	None
Nighttime construction lighting	Less lighting would be needed than assessed for the Approved Project	Less lighting would be needed than assessed for the Approved Project	Nighttime construction lighting would attract attention and create adverse visual effects by adding a glow effect to the night sky	None
Vegetation clearing creating visual contrast by exposing geometric lines of earth adjacent to the random pattern and texture of existing vegetation	Up to 4,138 acres of vegetation trimmed, vegetation cleared on graded areas	Up to 4,433 acres of vegetation cleared	Up to 6,831 acres of vegetation cleared	None
Nighttime operational lighting	Less lighting would be needed than assessed for the Approved Project	Less lighting would be needed than assessed for the Approved Project	Nighttime construction lighting could attract attention and create adverse visual effects by adding a glow effect to the night sky	None
Glare and glint	Less glare and glint would be experienced than assessed for the Approved Project due to the use of PV technology	Glare and glint from solar thermal parabolic trough technology, though reduced from the amount assessed for Approved Project, would be present	Glint from the solar arrays could be distracting or nuisance-causing, glare produced by the Approved Project would increase the visual contrast of the project in the landscape	None
Visual contrast in form, line, color, and texture	Overall, less visual contrast would be experienced than assessed for the Approved Project due to the reduction in area and structures. The project would create moderate-weak visual contrast with the landscape from the majority of the KOPs assessed for the Modified Project. The degree of contrast in	Less visual contrast would be experienced than assessed for the Approved Project due to the reduction in area, more visual contrast would be experienced than assessed for the Modified Project due to the amount of equipment and structures required for solar thermal parabolic trough technology	The project would create strong-moderate visual contrast with the landscape from the majority of the KOPs assessed for the Approved Project	None

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Visual Resources (cont.)				
Visual contrast in form, line, color, and texture (cont.)	form would be reduced from Strong/Moderate to Moderate/Weak. The degree of contrast in color would be reduced from Strong/Moderate to Moderate. The degree of contrast in line and texture would remain about equal.			
Water Resources				
Erosion and drainage	Disturbance of 4,138 acres within the ROW	Disturbance of 4,433 acres within the ROW	Disturbance of 6,831 acres	No disturbance
State jurisdictional waters	247 acres	264 acres	592 acres	None
Effect on groundwater levels and supply from project water usage	1,200 AF during construction	2,665 AF during construction	4,100 AF during construction	None
	40 AFY during operation and maintenance and decommissioning	390 AFY during operation and maintenance and decommissioning	600 AFY during operation and maintenance	None
Total groundwater consumption (construction, operation and maintenance, and decommissioning)	2,480 AF	15,145 AF	22,100 AF	None
Water quality effects of heat transfer fluid (HTF)	No use of HTF	Impact associated with use of HTF	Impact associated with use of HTF	No use of HTF
Water quality effects of land treatment units (LTUs)	No use of LTUs	Impact associated with LTUs	Impact associated with LTUs	No use of LTUs
RO Water Evaporation Pond area	Two 6-acre ponds (total of up to 12 acres)	Five to six 4-acre ponds (total of up to 24 acres)	Eight 4-acre ponds (total of up to 32 acres)	None
Effect from sanitary waste treatment during construction	Peak of 500 workers	Peak of 650 workers	Peak of 1,004 workers	None
Effect from process wastewater during construction	No concrete batch plant	Impacts from concrete batch plant operations	Impacts from concrete batch plant operations	None

TABLE 2-5 (Continued)
COMPARISON OF ENVIRONMENTAL AND OTHER EFFECTS OF ALTERNATIVES 1 AND 2

	Current BLM Action (Impacts Analyzed in this EIS)		Prior BLM Action (Impacts Analyzed in the 2010 PA/FEIS, Summarized in this EIS for Comparison)	
Resource or BLM Program Area	**Approve Proposed Modification**	**Deny Proposed Modification**	**Approved Project**	**No Project**
Wildland Fire Ecology				
Impacts on fire regime	Less impacts to fire regime than Approved Project due to decreased vehicle traffic/human presence and smaller disturbance footprint	Less impacts to fire regime than Approved Project due to decreased vehicle traffic/human presence and smaller disturbance footprint	Increased vehicle traffic/human presence may directly result in fire. Disturbance of soil will result in increased spread of invasive species	None

2.6 Alternatives Considered but Eliminated from Detailed Analysis

Potential alternatives to the Modified Project were screened for NEPA purposes using the criteria set forth in regulations of the Council on Environmental Quality (CEQ) (40 CFR §1502.14(a)), BLM Instruction Memorandum (IM) 2011-059, and BLM NEPA Handbook Section 6.6.3. These authorities provide that an action alternative may be eliminated from detailed analysis if:

1. It is ineffective (it would not respond to the BLM's purpose and need);
2. It is technically or economically infeasible;
3. It is inconsistent with the basic policy objectives for the management of the area (e.g., as set forth in the applicable land use plan – here, the CDCA Plan);
4. Its implementation is remote or speculative;
5. It is substantially similar in design to an alternative that is analyzed; or
6. It would have substantially similar effects to an alternative that is analyzed.

The BLM worked closely with the Grant Holder before the Level 3 variance request was submitted regarding the location and configuration of the Modified Project to encourage that it be proposed within that portion of the ROW for the Approved Project where impacts could be further reduced relative to the Approved Project. As discussed below, alternative sites, renewable energy technologies, configurations, and approaches, including those alternatives raised during scoping (see Appendix D, section 2.14) were considered but eliminated from detailed analysis based on one or more of the screening factors as described below.

2.6.1 Site Alternatives

Potential site alternatives to the Modified Project outside the original area of the Approved Project were raised during scoping, including alternatives on "brownfields" or degraded or contaminated lands or on other alternative project sites, but these were rejected from detailed consideration because they would not meet the BLM's purpose and need to respond to the Grant Holder's request for a Level 3 variance associated with the current Approved Project under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. §1701 et seq.) and modification of the existing ROW grant. Additionally, BLM already deemed the site suitable for solar energy development when it approved the Approved Project and Plan Amendment in the 2010 ROD. For this reason, this EIS does not analyze in detail potential alternatives on other BLM-administered public land, private land, "brownfields," other degraded or previously disturbed lands, or other specific project sites.

2.6.2 Other Types of Energy Projects and Approaches

Other types of renewable energy projects including wind, geothermal, and other solar technologies were rejected from detailed consideration because they would not meet the BLM's purpose and need to respond to the Grant Holder's request for a Level 3 variance and modification of the existing ROW grant for a solar thermal development to construct, operate,

maintain, and decommission a solar PV facility within the ROW of the Approved Project. Distributed generation solar and conservation and demand side management, as raised in scoping, were rejected from detailed consideration for the same reason.

2.6.3 Other Configurations within the Approved Project's ROW

The BLM and the Grant Holder have proposed a footprint for the Modified Project that avoids and minimizes impacts to the extent possible while accommodating the Grant Holder's project objectives. When developing the Modified Project, the Grant Holder reviewed the analysis in the 2010 PA/FEIS and eliminated areas with desert dry wash woodland in the southwest portion of the approved site. It also avoided some known cultural resources in the eastern and southern portions of the site. These proposed changes address concerns raised during scoping regarding site alternatives that would reduce the acreage of the solar plant site and/or avoid or reduce impacts to desert or ephemeral washes. The 4,138 acres that make up the Modified Project site represent the areas with the fewest potential resource conflicts associated within the larger Approved Project area.

2.7 Proposed Design Features

The Project Owner has proposed to incorporate facility design and other measures into the Proposed Modification as design features (DFs) to reduce or avoid potential environmental impacts that could result from the Modified Project. These DFs are substantially the same as the Conditions of Certification included in the CEC's Final Commission Decision (CEC, 2014). These DFs would be implemented as features of project design, and are not "mitigation measures" as the term is used in the NEPA context. The proposed DFs are listed in Table 2-6; attachments referenced in the DFs are provided in the CEC's Final Commission Decision (CEC, 2014). Several of the proposed DFs address the approved gen-tie line; because the gen-tie line is not re-analyzed in this Draft EIS, these DFs are not discussed in Chapter 3, *Environmental Analysis*.

TABLE 2-6
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design	
GEN-1: The Project Owner shall design, construct, and inspect the project in accordance with the 2010 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The Project Owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All transmission facilities (lines, switchyards, switching stations and substations) are covered in the conditions of certification in the **Transmission System Engineering** section of this document. In the event that the initial engineering designs are submitted to the CBO when the successor to the 2010 CBSC is in effect, the 2010 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. The Project Owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.	Within 30 days following receipt of the certificate of occupancy, the Project Owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's decision have been met in the area of facility design. The Project Owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO. Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.
GEN-2: Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawing and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the Project Owner shall provide specific packages to the CPM upon request.	At least 60 days (or a Project Owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 2**, below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report. **Facility Design Table 2** **Major Structures and Equipment List** **Equipment/System** — **Quantity (Plant)** PV Module — 6,000,000 PV Racking System[1] — 71,500 Step-up Transformer Foundation and Connections — 4 Power Conversion Station Foundation and Connections — 250

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
	Facility Design Table 2 (continued) **Major Structures and Equipment List**

Equipment/System	Quantity (Plant)
Met Station Foundation and Connections	4
Circuit Breaker Foundation and Connections	29
Operation and Maintenance Facility Building Structure, Foundation and Connections	1
Raw/Fire Water Tank Structure, Foundation and Connections	1
Demineralized Water Tank Structure, Foundation and Connections	1
Potable Water Tank Structure, Foundation and Connections	1
Drainage System (including sanitary drain and waste)	1 Lot
HVAC Systems	1 Lot
Temperature Control and Ventilation Systems (including water and septic connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchboards, Buses and Towers for Operations	1 Lot
Electrical Cables/Duct Banks	4 Lots

[1] PV equipment quantities are based on the existing plant layouts

GEN-3: The Project Owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the Project Owner and the CBO. These fees may be consistent with the fees listed in the 2010 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.	The Project Owner shall make the required payments to the CBO in accordance with the agreement between the Project Owner and the CBO. The Project Owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid.
GEN-4: Prior to the start of rough grading, the project owner shall assign a California- registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the **Transmission System Engineering** section of this document.	At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part. The RE shall: 1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS; 2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications; 3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project; 4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents; 5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and 6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications. The RE (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place. The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements. If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.	If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.
GEN-5: Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of PV plants and equipment support; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **Transmission System Engineering** section of this document. The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.	At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer and engineering geologist assigned to the project. At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within five days of the approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project. If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. A. The civil engineer shall: 1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering; 2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and 3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures. B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall: 1. Review all the engineering geology reports; 2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load; 3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2010 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and 4. Recommend field changes to the civil engineer and RE. This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations. C. The engineering geologist shall: 1. Review all the engineering geology reports and prepare a final soils grading report; and 2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2010 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).	If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
D. The design engineer shall: 1. Be directly responsible for the design of the proposed structures and equipment supports; 2. Provide consultation to the RE during design and construction of the project; 3. Monitor construction progress to ensure compliance with engineering LORS; 4. Evaluate and recommend necessary changes in design; and 5. Prepare and sign all major building plans, specifications, and calculations. E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's decision. F. The electrical engineer shall: 1. Be responsible for the electrical design of the project; and 2. Sign and stamp electrical design drawings, plans, specifications, and calculations.	
GEN-6: Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2010 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document. A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels). The special inspector shall: 1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection; 2. Inspect the work assigned for conformance with the approved design drawings and specifications; 3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action; and 4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.	At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report. If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.
GEN-7: If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.	The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
GEN-8: The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.	Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next monthly compliance report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents. Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe pdf 6.0) files, with restricted (password-protected) printing privileges, on archive quality compact discs.
CIVIL-1: The project owner shall submit to the CBO for review and approval the following: 1. Design of the proposed drainage structures and the grading plan; 2. An erosion and sedimentation control plan; 3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and 4. Soils, geotechnical, or foundation investigations reports required by the 2010 CBC.	At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.
CIVIL-2: The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area.	The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.
CIVIL-3: The project owner shall perform inspections in accordance with the 2007**2010** CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO. If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.	Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following monthly compliance report.
CIVIL-4: After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans.	Within 30 days (or project owner- and CBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
	combined grading plans, and that the facilities are adequate for their intended purposes, along with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.
STRUC-1: Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** of condition of certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 2**, above): 1. Major project structures; 2. Major foundations, equipment supports, and anchorage; and 3. Large field-fabricated tanks. Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component. The project owner shall: 1. Obtain approval from the CBO of lateral force procedures proposed for project structures; 2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications; 3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation; 4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and 5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.	At least 60 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 2** of condition of certification **GEN-2**, above, the project owner shall submit to the CBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM. The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.
STRUC-2: The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval: 1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters); 2. Concrete pour sign-off sheets;	If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques); 4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and 5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2010 CBC.	The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.
STRUC-3: The project owner shall submit to the CBO design changes to the final plans required by the 2010 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.	On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.
STRUC-4: Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2010 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.	At least 30 days (or project owner- and CBO-approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification. The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.
MECH-1: The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 2**, condition of certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction. The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to CBO design review and approval, and submit a signed statement to the CBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards, which may include, but are not limited to: 1. Title 24, California Code of Regulations, Part 5 (California Plumbing Code); 2. Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems); 3. Title 24, California Code of Regulations, Part 2 (California Building Code); and 4. Riverside County codes. The CBO may deputize inspectors to carry out the functions of the code enforcement agency.	At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 2**, condition of certification **GEN-2,** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report. The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
MECH-2 (deleted)	
MECH-3: The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets. The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.	At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.
ELEC-1: Prior to the start of any increment of electrical construction for all electrical equipment and systems over 240 Volts (V) (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document. A. Final plant design plans shall include: 1. one-line diagrams for the 34.5 kV systems and typical one-line diagrams for all systems under 34.5 kV and over 240 V; and 2. system grounding drawings. B. Final plant calculations must establish: 1. short-circuit ratings of plant equipment; 2. ampacity of feeder cables; 3. voltage drop in feeder cables; 4. system grounding requirements; 5. coordination study calculations for fuses, circuit breakers and protective relay settings for the all AC systems under 34.5 kV and over 240 V; 6. system grounding requirements; and 7. lighting energy calculations.	At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Facility Design (cont.)	
C. The following activities shall be reported to the CPM in the monthly compliance report: 1. Receipt or delay of major electrical equipment; 2. Testing or energization of major electrical equipment; and 3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission decision.	
Transmission System Engineering	
TSE-1: The project owner shall provide the Compliance Project Manager (CPM) and the Chief Building Official (CBO) with a schedule of transmission facility design submittals, a master drawing list, a master specifications list, and a major equipment and structure list. The schedule shall contain both a description and a list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.	Prior to the start of construction of transmission facilities, the project owner shall submit the schedule, a master drawing list, and a master specifications list to both the CBO and the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in Table 1: Major Equipment List, below). Additions and deletions shall be made to the table only with both CPM and CBO approval. The project owner shall provide schedule updates in the monthly compliance report. **Table 1** **Major Equipment List** Breakers / Surge arrestors / Switchyard control building Step-up transformer / Disconnects / Transmission pole/tower Switchyard / Take-off facilities / Grounding system Busses / Electrical control building
TSE-2: Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following: a. a civil engineer; b. a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; c. a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or d. a mechanical engineer (Business and Professions Code, § 6704 et seq. require state registration to practice as either a civil engineer or a structural engineer in California). The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular segment of the project, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical	Prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five (5) days of the approval. If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five (5) days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five (5) days of the approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Transmission System Engineering (cont.)	
engineer. The civil, geotechnical, or civil and design engineer, assigned as required by Facility Design Condition of Certification GEN-5, may be responsible for design and review of the Transmission System Engineering facilities. The project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earth work and require changes if site conditions are unsafe or do not conform with the predicted conditions used as the basis for design of earth work or foundations. The electrical engineer shall: a. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities; and b. sign and stamp electrical design drawings, plans, specifications, and calculations.	
TSE-3: If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action (2001 California Building Code, Chapter 1, § 108.4, approval required; Chapter 17, § 1701.3, *Duties and Responsibilities of the Special Inspector;* Appendix, Chapter 33, § 3317.7, *Notification of Noncompliance*). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval, with reference to this condition of certification.\	The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five (5) days, the reason for the disapproval, along with the revised corrective action required to obtain the CBO's approval.
TSE-4: For the power plant switchyard, outlet line, and termination, the project owner shall not begin any construction until plans for that increment of construction have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one (1) year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report: a. receipt or delay of major electrical equipment; b. testing or energization of major electrical equipment; and c. the number of electrical drawings approved, submitted for approval, and still to be submitted.	Prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications, and calculations for equipment and systems of the power plant switchyard, outlet line, and termination, including a copy of the signed and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS. The project owner shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.
TSE-5: The project owner shall ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, and the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations, as determined by the CBO. a) The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards. b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.	Prior to the start of construction of transmission facilities, the project owner shall submit to the CBO for approval: a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, CA ISO standards, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Transmission System Engineering (cont.)	
c) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards. d) The project conductors shall be sized to accommodate the full output of the project. e) Termination facilities shall comply with applicable SCE interconnection standards. f) The project owner shall provide to the CPM: a. The Special Protection System (SPS) sequencing and timing if applicable, b. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, c. The final Phase II Interconnection Study, including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing if applicable; and A copy of the executed LGIA signed by the California ISO and the project owner.	b. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[2] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC), and related industry standards; c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements **TSE-5** a) through f), above; d. The Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM. e. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, f. The final Phase II Interconnection Study, including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing if applicable, and g. A copy of the executed LGIA signed by the California ISO and the project owner.
TSE-6: The project owner shall provide the following notice to the California ISO prior to synchronizing the facility with the California Transmission System: a. At least one (1) week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and b. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.	The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one (1) week prior to initial synchronization with the grid. The project owner shall contact the California ISO Outage Coordination Department, (Monday through Friday, between the hours of 0700 and 1530, at (916) 351-2300) at least one (1) business day prior to synchronizing the facility with the grid for testing. A report of conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

[2] Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Transmission System Engineering (cont.)	
TSE-7: The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with: CPUC GO-95 or NESC; Title 8 CCR; Articles 35, 36, and 37 of the High Voltage Electric Safety Orders; applicable interconnection standards; NEC; and related industry standards. In case of nonconformance, the project owner shall inform the CPM and CBO in writing within 10 days of discovering such nonconformance and describe the corrective actions to be taken.	Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO: 1. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC; Title 8 CCR,; Articles 35, 36, and 37 of the High Voltage Electric Safety Orders; applicable interconnection standards; NEC; and related industry standards. 2. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan." 3. A summary of inspections of the completed transmission facilities and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.
Air Quality	
AQ-SC1: Air Quality Construction Mitigation Manager (AQCMM). The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation Conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this Condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).	At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.
AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4,** and **AQ-SC5**.	At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.
AQ-SC3: Construction Fugitive Dust Control. The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.	The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions: A. A summary of all actions taken to maintain compliance with this Condition; B. Copies of any complaints filed with the District in relation to project construction; and

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Air Quality (cont.)	
a. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries. b. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading (consistent with Biology Conditions of Certification that address the minimization of standing water); and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation. c. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. d. Visible speed limit signs shall be posted at the construction site entrances. e. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways. f. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station. g. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways. h. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM. i. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this Condition does not conflict with the requirements of the SWPPP. j. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris. k. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.	Any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Air Quality (cont.)	
l. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds. m. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard. n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this Condition shall remain in place until the soil is stabilized or permanently covered with vegetation.	
AQ-SC4: Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed. Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination. Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination. Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.	The AQCMM shall provide the CPM a Monthly Compliance Report to include: A. A summary of all actions taken to maintain compliance with this Condition; B. Copies of any complaints filed with the District in relation to project construction; and Any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.
AQ-SC5: Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**, and any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval. a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCM showing that the engine meets the Conditions set forth herein. b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 3 engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides	The AQCMM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions: A. A summary of all actions taken to control diesel construction related emissions; B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and Any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Air Quality (cont.)	
(NO_X) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this Condition, the use of such devices is "not practical" for the following, as well as other, reasons. 1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or 2. The construction equipment is intended to be on site for 10 days or less. 3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical. c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists : 1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure. 2. The retrofit control device is causing or is reasonably expected to cause engine damage. 3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public. 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination. d. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications. e. All diesel heavy construction equipment shall not idle for more than ten minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement. f. Construction equipment will employ electric motors when feasible.	
AQ-SC6: The project owner, when obtaining dedicated on-road or off-road vehicles for panel washing activities and other facility maintenance activities, shall only obtain vehicles that meet California on-road vehicle emission standards or appropriate USEPA/California off-road engine emission standards for the latest model year available when obtained.	At least 30 days prior to the start commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Air Quality (cont.)	
AQ-SC7: The project owner shall provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the verification of **AQ-SC3** that would be applicable to minimizing fugitive dust emission creation from operation and maintenance activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site; that: A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions. The site operations fugitive dust control plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than ARB approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of Condition **AQ-SC4**. The measures and performance requirements of **AQ-SC4** shall also be included in the operations dust control plan.	At least 30 days prior to start of commercial operation, the project owner shall submit to the CPM for review and approval a copy of the site Operations Dust Control Plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs. Within 60 days after commercial operation, the project owner shall provide to the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.
Biological Resources	
BIO-1: Designated Biologist Selection and Qualifications.[3] The project owner shall assign at least one Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval in consultation with CDFW and USFWS. The Designated Biologist must meet the following minimum qualifications: 1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; 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. Have at least one year of field experience with biological resources found in or near the project area;	At least 60 days prior to site mobilization or construction-related ground disturbance, the project owner shall submit the names of the Designated Biologist (s) along with completed USFWS Desert Tortoise Authorized Biologist Request Form (www.fws.gov/ventura/speciesinfo/protocols_guidelines) to the USFWS and the CPM for review and final approval. No site mobilization or construction-related ground disturbance, grading, boring, or trenching shall commence until an approved Designated Biologist is available to be on site. If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working

[3] USFWS <www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt> designates biologists who are approved to handle tortoises as "Authorized Biologists." Such biologists have demonstrated to the USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, and have received USFWS approval. Authorized Biologists are responsible for the implementation of all desert tortoise measures for which a project is approved and are permitted to then approve specific monitors to handle tortoises, at their discretion. The California Department of Fish and Wildlife (CDFW) must also approve such biologists, potentially including individual approvals for Biological Monitors approved by the Authorized Biologist. Designated Biologists are the equivalent of Authorized Biologists. Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist would be allowed to handle desert tortoises.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
4. Meet the current USFWS Authorized Biologist qualifications criteria (www.fws.gov/ventura/speciesinfo/protocols_guidelines), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; and 5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, in consultation with CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.	days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM and for consideration.
BIO-2: Designated Biologist Duties. The project owner shall ensure that the Designated Biologist(s) performs the activities described below during any pre- construction site mobilization and construction, commissioning, or other activities that may impact biological resources. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the project owner and the CPM. The Designated Biologist, or project owner if no Designated Biologist is available, duties, shall include the following: 1. Advise the project owner's Construction and Operation Managers and the CPM on the implementation of the biological resources Conditions of Certification; 2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner; 3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat; 4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and Conditions; 5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way; 6. Notify the project owner and the CPM within 24 hours of any non-compliance with any biological resources Conditions of Certification, injury or mortality of a special status species, or if more than six injured or dead birds or bats are located onsite at one time, and collect all data necessary to document such events, such as GPS location, photographs, and observations necessary to develop a comprehensive report; 7. Respond directly to inquiries of the CPM or responsible Energy Commission staff regarding biological resource issues, and provide or collect reasonably available data upon CPM request, including information as specified in BIO-2 #6; 8. Respond to reports of onsite kit fox mortality or injury, and to the extent possible, reports of dead or injured kit fox offsite and immediately adjacent the project boundaries or on access roads in accordance with Conditions of Certification BIO-17, fully document and record the event and collect pertinent data, and undertake restorative and/or disease prevention actions as specified within the American Badger and Kit Fox Management Plan prepared in accordance with Condition of Certification BIO-17.	The Designated Biologist shall provide copies of all written reports, email communications and summaries that document biological resources compliance activities in the Monthly Compliance Reports submitted to the CPM. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his or her duties cease, as approved by the CPM.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
9. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report; 10. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura/speciesinfo/protocols_guidelines>, as well as all terms and conditions of the Biological Opinion; and 11. Maintain the ability to be in regular, direct communication with representatives of CDFW, USFWS, and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base.	
BIO-3: Biological Monitor Selection and Qualifications. The project owner's approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008). Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures <www.fws.gov/ventura /speciesinfo/protocols_guidelines>.	The project owner shall submit the specified information to the CPM for approval at least 45 days prior to the start of any site mobilization or construction activities. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM and for approval at least 10 days prior to their first day of monitoring activities.
BIO-4: Biological Monitor Duties. The Biological Monitors shall assist the Designated Biologist(s) in conducting surveys and in monitoring of site mobilization, and construction related ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing or reporting responsibilities. The Designated Biologist shall remain the contact for the project owner and the CPM, however, biological monitors will also respond directly to inquiries of the CPM or other responsible Energy Commission staff regarding biological resource issues, and collect and provide reasonably available information as requested by the CPM.	The Designated Biologist shall submit in the Monthly Compliance Report to the CPM and copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. If actions may affect biological resources during operation a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties cease, as approved by the CPM.
BIO-5: Designated Biologist and Biological Monitor Authority. The project owner's construction/operation manager shall act on the advice of the Designated Biologist, Biological Monitor(s), and CPM to ensure conformance with the Biological Resources Conditions of Certification. The project owner shall provide Energy Commission staff with reasonable access to the project site under the control of the project owner and shall otherwise fully cooperate with the Energy Commission's efforts to verify the project owner's compliance with, or the effectiveness of, mitigation measures set forth in the Conditions of Certification. The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist the project owner's construction/operation manager shall halt all site mobilization, and construction, including ground disturbance, site preparation, or permanent installation activities, including installation of desert tortoise exclusion fencing and operation activities in areas specified by the Designated Biologist. During operations, or when the Designated Biologist and/or Biological Monitors are not onsite, the following provisions are the project owner's responsibility The Designated Biologist shall: 1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;	The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM and BLM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities, via phone and email. If the non-compliance or halt to construction or operation relates to desert tortoise or any other federal or state-listed species, the project owner shall notify the Palm Springs Office of USFWS and Ontario Office of CDFW at the same time. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem. Whenever corrective action is taken by the project owner, a determination of success or failure would be made by the CPM in consultation with BLM, USFWS and CDFW**,** within 5 working days after receipt of notice that corrective action is completed, or the project owner would be notified by the

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
2. Inform the project owner, the construction/operation manager, and the CPM when to resume activities; and 3. Notify the CPM immediately if there is a halt of any activities and advise them of any corrective actions that have been taken or would be instituted as a result of the work stoppage. If the work stoppage relates to desert tortoise or any other federal or state-listed species, the Palm Springs Office of USFWS and the Ontario Office of CDFW shall also be notified. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.	CPM that coordination with other agencies would require additional time before a determination can be made.
BIO-6: Worker Environmental Awareness Program (WEAP). The project owner shall develop and implement a Blythe Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the CPM. The project owner shall also provide the, USFWS and CDFW a copy of all portions of the WEAP relating to desert tortoise and any other federal or state-listed species for review and comment. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site mobilization, construction, commissioning, operation, non-operation**,** and closure. The WEAP shall: 1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants; 2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes, reptiles, or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans); 3. Place special emphasis on desert tortoise, including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures; 4. Provide pictures of desert tortoise, golden eagles, American badger, desert kit fox, Mojave fringe-toed lizard, and burrowing owl, provide information on sensitivity to human activities, legal protection, reporting requirements, and how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, also describe the protections for bird nests and provide information as described above; 5. Provide overview for staff of potential impacts to reptiles and amphibians from vehicle strikes on all project roads (paved and unpaved) during construction operations, closure phases, reporting requirements, and protection measures; 6. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers to: a) dispose of cigarettes and cigars appropriately and not leave them on the ground or buried, b) keep vehicles on graveled, cleared or well-maintained ground at all times to prevent vehicle exhaust systems from coming in contact with roadside weeds, c) use and maintain approved spark arresters on all power equipment, and d) keep a fire extinguisher on hand at all times; 7. Describe the temporary and permanent habitat protection measures to be implemented at the project site;	At least 45 days prior to site mobilization and construction the project owner shall provide to the CPM for review and approval and to BLM, USFWS, and CDFW a copy of the final WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site mobilization and construction the project owner shall submit two copies of the final WEAP and implement the training for all workers. Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation. Throughout the life of the project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CPM, BLM, USFWS, and CDFW and upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training. During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
8. Identify whom to contact if there are further comments and questions about the material discussed in the program; and 9. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines. The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist and documented within the Monthly Compliance Report.	
BIO-7: Biological Resources Mitigation Implementation and Monitoring Plan. The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two copies of the proposed BRMIMP to the CPM for review and approval. The project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Relocation Translocation Plan, the USFWS Biological Opinion, the Raven Management Plan, the Closure, Conceptual Restoration Plan, the American Badger and Desert Kit Fox Management Plan, the Burrowing Owl Mitigation and Monitoring Plan, the Weed Management Plan, and all other biological mitigation and/or monitoring plans associated with the project. The project owner shall provide to BLM, CDFW, and USFWS a copy of all portions of the BRMIMP relating to desert tortoise and any other federal or state-listed species for review and comment. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following: 1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner; 2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts; 3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion; 4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure; 5. All required mitigation measures for each sensitive biological resource, including remedial actions for standing water onsite in accordance with Conditions of Certification BIO-8 and known or suspected disease outbreaks on the project site in accordance with Condition of Certification BIO-17; 6. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after whole acreages and a determination of whether more or less habitat compensation is necessary in the Construction Termination Report prepared in accordance with BIO-28; 7. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities; 8. Duration for each type of monitoring and a description of monitoring methodologies and frequency;	The project owner shall submit the draft BRMIMP to the CPM at least 60 days prior to start of any site mobilization and construction-related ground disturbance, grading, boring, and trenching. At the same time, the project owner shall provide to BLM, CDFW, and USFWS a copy of all portions of the draft BRMIMP relating to desert tortoise and any other federal or state-listed species. The project owner shall provide the final BRMIMP to the CPM, BLM, CDFW, and USFWS at least 30 days prior to the start of any site mobilization and construction, grading, boring, or trenching. The BRMIMP shall contain all of the required measures included in all biological conditions of certification. No site mobilization or-construction-related ground disturbance, grading, boring or trenching may occur prior to approval of the final BRMIMP by the CPM. If any permits have not yet been received when the final BRMIMP is submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition(s). The project owner shall submit to the CPM the revised or supplemented BRMIMP within 10 days following the project owner's receipt of any additional permits. Under no circumstances shall ground disturbance proceed without implementation of all permit conditions. To verify that the extent of construction disturbance does not exceed that described in these conditions, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM, BLM, USFWS, and CDFW. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and shall be submitted prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction, and shall be submitted to the CPM, BLM, USFWS, and CDFW no later than 90 days after completion of construction. The project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction. Construction acreages shall be rounded to the nearest acre. Any changes to the approved BRMIMP must be approved by the CPM in consultation with BLM, CDFW, and USFWS.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
9. Performance standards to be used to help decide if/when proposed mitigation is or is not successful; 10. All performance standards and remedial measures to be implemented if performance standards are not met; 11. Biological resources-related facility closure measures including a description of funding mechanism(s); 12. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and 13. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Data Base CNDDB per CDFW requirements.	Implementation of BRMIMP measures (for example, construction activities that were monitored, species observed) shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization and construction activities, and which mitigation and monitoring items are still outstanding.
BIO-8: Impact Avoidance and Minimization Measures. The project owner shall undertake the following measures to manage the project site and related facilities during site mobilization, operation and maintenance in a manner to avoid or minimize impacts to biological resources: 1. ***Limit Disturbance Areas.*** Minimize soil disturbance by locating staging areas, laydown, and temporary parking or storage for linear facilities in existing disturbed areas. Equipment maintenance and refueling shall not be conducted with 100 feet of any sensitive resource (for example, waters of the state, creosote bush–big galleta association, desert dry wash woodland, unvegetated ephemeral dry wash, dune habitats, and rare plant populations). Limit the width of the work area near sensitive resources. Avoid blading temporary access roads where feasible and instead drive over and crush the vegetation to preserve the seed bank and biotic soil crusts. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to site mobilization and construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, project vehicles and equipment shall be confined to the flagged areas. 2. ***Minimize Road Impacts.*** New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction. 3. ***Minimize Traffic Impacts.*** Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour within the project area, on dirt maintenance roads for linear facilities, or on dirt access roads to the project site. Private paved roads shall not exceed 45 mph; speed limits will be lowered during the tortoise's most active period (April through May and September through October [USFWS 2010]) to 35 miles per hour. The speed limit within 3 miles of the Colorado River Substation will be posted at 10 mph. Speed limit signs shall be posted on new access roads to the site. 4. ***Salvage or Relocate Wildlife during Ground Disturbance Activities.*** The Designated Biologist or Biological Monitor shall salvage or relocate sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-site habitat or out of harm's way. The species shall be salvaged or relocated when conditions will not jeopardize the health and safety of the monitor.	All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures would be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed. As part of the Annual Compliance Report each year following construction, the Designated Biologist shall provide a report to the CPM that describes compliance with avoidance and minimization measures to be implemented during construction, operation, and maintenance (for example a summary of the incidence of road-killed animals during the year, implementation of measures to avoid toxic spills, erosion and sedimentation, efforts to enforce worker guidelines, etc.). No less than 30 days prior to site mobilization and construction, the project owner shall submit to the CPM, BLM, and CDFW a final agency-approved Revegetation Plan that has been reviewed and approved by the CPM in consultation with BLM. All modifications to the Revegetation Plan shall be made only after approval from the CPM. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Revegetation Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding. As part of the Annual Compliance Report, each year following construction until the completion of the revegetation monitoring specified in the Revegetation Plan, the Designated Biologist or project owner shall provide a report to the CPM that includes: a summary of revegetation activities for the year, a discussion of whether revegetation performance standards for the year were met; and recommendations for revegetation remedial action, if warranted, are planned for the upcoming year.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
5. ***Monitor During Construction.*** In areas that have not been fenced with desert tortoise exclusion fencing and cleared, the Designated Biologist shall be present at the construction site during all project activities that have potential to disturb soil, vegetation, and wildlife. Upon completion of desert tortoise fencing installation and clearing the Designated Biologist or Biological Monitor shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall clear ahead of equipment during brushing and grading activities. If desert tortoise are found during construction monitoring, procedures outlined in BIO-9 shall be implemented. 6. ***Minimize Impacts of Transmission/Pipeline Alignments, Roads, and Staging Areas.*** Staging areas for construction on the plant site shall be within the area that has been fenced with desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) S*uggested Practices for Avian Protection on Power Lines* (APLIC 1994) and *Mitigating Bird Collisions with Power Lines* (APLIC 2004) to reduce the likelihood of large bird electrocutions and collisions. Where feasible, avoid impacts to desert washes and special-status plants by adjusting the locations of poles and laydown areas, and the alignment of the roads and pipelines. Construction drawings and grading plans shall depict the locations of sensitive resources and demonstrate where temporary impacts to sensitive resources can be avoided and where they cannot. 7. ***Avoid Use of Toxic Substances.*** Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides in BIO-14 (Weed Management Plan). 8. ***Minimize Lighting Impacts.*** Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat. 9. ***Minimize Noise Impacts.*** Loud construction activities (e.g., hydraulic ram, or other) shall be avoided from February 15 to April 15 when it would result in noise levels over 65 dBA in nesting habitat (excluding noise from passing vehicles). Loud construction activities may be permitted from February 15 to April 15 only if: a. the Designated Biologist provides documentation (i.e., nesting bird data collected using methods described in BIO-15 and maps depicting location of the nest survey area in relation to noisy construction) to the CPM indicating that no active nests would be subject to 65 dBA noise, OR b. the Designated Biologist or Biological Monitor monitors active nests within the range of construction-related noise exceeding 65 dBA. The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the CPM. The Plan shall include adaptive management measures to prevent disturbance to nesting birds from construction related noise. Triggers for adaptive management shall be evidence of project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Nesting Bird Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of disturbance to the nesting bird.	If loud construction activities are proposed between February 15 and April 15 which would result in noise levels over 65 dBA in nesting habitat, the project owner shall submit nest survey results (as described in 8a) to the CPM no more than 7 days before initiating such construction. If an active nest is detected within this survey area the project owner shall submit a Nesting Bird Monitoring and Management Plan to the CPM for review and approval no more than 7 days before initiating noisy construction.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
10. ***Avoid Vehicle Impacts to Desert Tortoise.*** Parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed outside the areas permanently fenced with desert tortoise exclusion fencing, it shall be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may move it out of harm's way as described in the USFWS Desert Tortoise Field Manual (USFWS 2009).	
11. ***Avoid Wildlife Pitfalls.*** To avoid trapping desert tortoise and other wildlife in trenches, pipes or culverts, the following measures shall be implemented: a. *Backfill Trenches.* At the end of each work day, the Designated Biologist or Biological Monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday and at the beginning of each day by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor move it out of harm's way as described in the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009). Any other wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed. b. *Avoid Entrapment of Desert Tortoise.* Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than **8** inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on elevated pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.	
12. ***Minimize Standing Water.*** Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and shall take appropriate action to reduce water application where necessary.	
13. ***Dispose of Road-killed Animals.*** Road killed animals or other carcasses detected by personnel on roads associated with the project area shall be reported immediately to a Designated Biologist, Biological Monitor or Project Environmental Compliance Manager who will promptly remove the roadkill for disposal (i.e. removal to a landfill or disposal at the BSPP facility). For special-status species roadkill, the Biological Monitor shall contact the CPM, CDFW and USFWS within 1 working day of detection (within 8 hours in the case of a desert kit fox) of the carcass for guidance on disposal or storage of the carcass; all other roadkill shall be disposed of promptly, or as directed by the USFWS or CDFW. Handling of desert kit fox carcasses shall follow handling requirements included in the **BIO-17** American Badger and Kit Fox Management Plan. The Biological Monitor shall provide the special-status species record as described in **BIO-11** below.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
14. ***Minimize Spills of Hazardous Materials.*** All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.	
15. ***Worker Guidelines.*** During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.	
16. ***Avoid Spread of Noxious Weeds.*** The project owner shall implement the following Best Management Practices during construction and operation, and all other measures as required in the final approved Weed Management Plan (BIO-14) to prevent the spread and propagation of noxious weeds and other invasive plants: a. For work outside the project facility fence line limit the size of any vegetation and/or ground disturbance and limit ingress and egress to defined routes; b. Prevent spread of non-native plants via vehicular sources by implementing Trackclean™ or other methods of vehicle cleaning for vehicles getting into and out of the construction sites. Earth-moving equipment shall be cleaned prior to transport to the construction site; and c. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations.	
17. ***Implement Erosion Control Measures.*** Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter “Waters of the State”. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) which slope toward drainages shall be stabilized to reduce erosion potential.	
18. ***Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization.*** If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.	
19. ***Implement Erosion Control Measures.*** All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. All areas subject to temporary disturbance shall be restored to pre-project grade and stabilized to prevent erosion and promote natural revegetation. Temporarily disturbed areas within the Project area include, but are not limited to: linear facilities, temporary access roads, temporary lay-down and staging areas. If erosion control measures include the use of seed, only locally native plant species from a local seed source shall be used. Local seed includes seeds from plants within the Chuckwalla Valley or Colorado River Hydrologic Units.	
20. ***Avoid Spreading Weeds.*** Prior to the start of site mobilization and construction, flag and avoid dense populations of highly invasive noxious weeds. If these areas cannot be avoided, they shall be pre-treated by the methods described in **BIO-14** (Weed Management Plan). Noxious weeds and other invasive non-native plants in the temporarily disturbed areas shall be managed according to the requirements in **BIO-14**.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
21. ***Salvage Topsoil.*** Topsoil from native desert areas to be temporarily disturbed (other than existing roads that have already been disturbed from previous construction activities) shall be salvaged, preserved and re-used for restoration of temporarily disturbed areas, except where less invasive methods are used to maintain soil seed banks, functioning and root crowns (e.g., drive over/crush method). Salvaged topsoil shall be collected, stored and applied in a way that maintains the viability of seed and soil crusts. The project owner shall excavate and collect the upper soil layer (the top 1 to 2 inches that includes the seed bank and biotic soil crust) as well as the lower soil layer in accordance with the Project's Revegetation Plan. The upper and lower soil layers shall be stockpiled separately in areas that will not be impacted by other grading, flooding, erosion, or pollutants. If the soil is to be stored more than 2 weeks it shall be spread out to a depth of no more than approximately 6 inches to maintain the seed and soil crust viability, unless that storage would create increase disturbance to undisturbed surfaces. As needed, the project owner shall install temporary construction fencing around stockpiled topsoil, and signage that indicates whether the pile is the upper layer seed bank, or the lower layer, and clearly indicates that the piles are for use only in erosion control. After construction, the project owner shall replace the topsoil in the temporarily disturbed areas in the reverse order of stockpiling, subsoil, and then the seed-containing upper layer of topsoil. 22. ***Revegetation of Temporarily Disturbed Areas.*** The project owner shall prepare and implement a Revegetation Plan to restore all areas subject to temporary disturbance to pre-project grade and conditions. Temporarily disturbed areas within the project area include, but are not limited to: all proposed locations for linear facilities, temporary access roads, construction work temporary lay-down areas, and construction equipment staging areas. The Revegetation Plan shall include a description of topsoil salvage and seeding techniques and a monitoring and reporting plan, and the following performance standards by the end of monitoring year 2: a. at least 80 percent of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and b. relative cover and density of plant species within the temporarily disturbed areas shall equal at least 60 percent. 23. ***Decommission Temporary Access Roads with Vertical Mulching.*** Discourage ORV use of temporary construction roads by installing vertical mulching at the head of the road to a distance necessary to obscure the road from view, when the road is no longer in use for construction. Construction roads that are used infrequently will be blocked by barricades that can be easily removed for access by construction personnel, until they are no longer used. Boulder barricades and gates shall not be used for permanent vertical mulch unless the remainder of the site is fenced to prevent driving around the gate or barricade. Designated ORV routes and roads shall not be closed.	
BIO-9: Desert Tortoise Clearance Surveys and Fencing. The project owner shall undertake appropriate measures to manage the project site and related facilities in a manner to avoid or minimize impacts to desert tortoise**.** Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the most recent USFWS Desert Tortoise Field Manual (currently USFWS 2009) <http://www.fws.gov/ventura/speciesinfo/protocols_guidelines> or more current guidance provided by CDFW and USFWS. The project owner shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. The project owner shall implement the following measures: 1. ***Desert Tortoise Exclusion Fence Installation.*** To avoid impacts to desert tortoises, permanent exclusion fencing shall be installed along the permanent perimeter security fence (boundaries) as phases are constructed. Temporary fencing shall be installed along any subset of the plant site phasing that does not correspond to permanent perimeter fencing. Temporary fencing shall be installed along linear features unless a Biological	All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to BLM, the CPM, USFWS, and CDFW describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
Monitor is present in the immediate vicinity of construction activities for the linear facility. All permanent or temporary fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the desert tortoise exclusionary fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) or Biological Monitors (with direct contact to the Designated Biologist) using techniques outlined in the *Desert Tortoise Field Manual* (USFWS 2009) and may be conducted in any season with USFWS and **CDFW** approval. Biological Monitors may assist the Designated Biologist under his or her **direct** supervision. These fence clearance surveys shall provide 100-percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line. Disturbance associated with desert tortoise exclusionary fence construction shall not exceed 30 feet on either side of the proposed fence alignment. Prior to the surveys the project owner shall provide to the CPM, **BLM, CDFW** and USFWS a figure clearly depicting the limits of construction disturbance for the proposed fence installation. The fence line survey area shall be 90 feet wide centered on the fence alignment. Where construction disturbance for fence line installation can be limited to 15 feet on either side of the fence line, this fence line survey area may be reduced to an area approximately 60 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. Desert tortoise located within the utility ROW alignments shall be moved out of harm's way in accordance with the USFWS *Desert Tortoise Field Manual* (USFWS 2009). Any desert tortoise detected during clearance surveys for fencing within the project site and along the perimeter fence alignment shall be translocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan (**BIO-10**). Tortoise shall be handled by the Designated Biologist(s) in accordance with the USFWS *Desert Tortoise Field Manual* (USFWS 2009). a. *Timing, Supervision of Fence Installation.* The exclusion fencing shall be installed in any area subject to disturbance prior to the onset of site clearing and grubbing in that area. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present. b. *Fence Material and Installation.* All desert tortoise exclusionary fencing shall be constructed in accordance with the USFWS' *Desert Tortoise Field Manual* (USFWS 2009) (Chapter 8 – Desert Tortoise Exclusion Fence) or the most recent agency guidance with the approval of the CPM. c. *Security Gates.* Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. d. *Fence Inspections.* Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected. If tortoise were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times a day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
2. ***Desert Tortoise Clearance Surveys within the Plant Site.*** Clearance surveys shall be conducted in accordance with the USFWS *Desert Tortoise Field Manual* (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) or the most recent USFWS Desert Tortoise Field Manual (currently 2009) and shall consist of two surveys covering 100 percent the project area by walking transects no more than 15-feet apart. If a desert tortoise is located on the second survey, a third survey shall be conducted. To maximize the opportunity to find all tortoises each separate survey shall be walked in a different direction, in opposite directions, and/or offset to allow opposing angles of observation, or as directed in the Biological Opinion. Clearance surveys of the plant site may only be conducted when tortoises are most active (April through May or September through October) unless the project receives approval from CDFW and USFWS. Clearance surveys of linear features may be conducted during anytime of the year. Surveys outside of the active season in areas other than Phase 1A require approval by USFWS and CDFW. Any tortoise located during clearance surveys of the power plant site and linear features shall be translocated or relocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan: a. *Burrow Searches.* During clearance surveys all desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS *Desert Tortoise Field Manual* (USFWS 2009). To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined in accordance with the Desert Tortoise Relocation/Translocation Plan. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan. b. *Burrow Excavation/Handling.* All potential desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises in accordance with the Desert Tortoise Relocation/Translocation Plan. All desert tortoise handling, and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the USFWS *Desert Tortoise Field Manual* (USFWS 2009).	
3. ***Monitoring Following Clearing*.** Following the desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the project site to perform clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be onsite for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.	
4. ***Reporting.*** The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert. Desert tortoise moved from within project areas shall be marked and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
BIO-10: Desert Tortoise Relocation/Translocation Plan. The project owner shall develop and implement a final Desert Tortoise Relocation/Translocation Plan (Plan) that is consistent with current USFWS approved guidelines, and meets the approval of the CPM. The Plan shall include guidance specific to each of the 4 phases of project construction, as described in **BIO-28** (Phasing), and shall include measures to minimize the potential for repeated translocations of individual desert tortoises. The goals of the Desert Tortoise Relocation/Translocation Plan shall be to relocate or translocate all desert tortoises from the project site to nearby suitable habitat; minimize impacts on resident desert tortoises outside the project site; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the relocation/translocation effort through monitoring. The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the project owner and shall include all revisions deemed necessary by BLM, USFWS, CDFW and the Energy Commission staff.	At least 60 days prior to site mobilization and construction the project owner shall provide the CPM with the final version of a Desert Tortoise Relocation/Translocation Plan that has been reviewed and approved by the CPM in consultation with BLM, USFWS and CDFW. All modifications to the approved Plan shall be made only after approval by the CPM, in consultation with BLM, USFWS and CDFW. Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Plan have been completed, and a summary of all modifications to measures made during implementation of the Plan.
BIO-11: Desert Tortoise Compliance Verification. The project owner shall provide Energy Commission, CDFW, and USFWS and BLM staff with reasonable access to the project site and compensation lands under the control of the project owner and shall otherwise fully cooperate with the Energy Commission's and BLM's efforts to verify the project owner's compliance with, or the effectiveness of, mitigation measures set forth in the Conditions of Certification. The Designated Biologist shall do all of the following: 1. ***Notification.*** Notify the CPM at least 14 calendar days before initiating site mobilization and construction activities; immediately notify the CPM in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the Conditions of Certification; 2. ***Monitoring During Grubbing and Grading.*** Remain onsite daily while vegetation salvage, grubbing, grading and other ground-disturbance construction activities are taking place to avoid or minimize take of listed species and verify personally or use Biological Monitors, to check for compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones. 3. ***Monthly Compliance Inspections.*** Conduct compliance inspections at a minimum of once per month after ground disturbance activities including clearing, grubbing, and grading are completed and submit a monthly compliance report to the BLM, CPM, USFWS and CDFW during construction. 4. ***Notification of Injured, Dead, or Relocated Listed Species.*** If an injured or dead listed or special status species is detected within or near the Project Disturbance area, the CPM, the Ontario Office of CDFW, and Palm Springs Office of USFWS shall be notified immediately by phone and email, or as otherwise directed by the CPM or, in the case of avian species, controlling permits as issued by the USFWS. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species (within 8 hours in the case of desert kit fox). Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant: a. *Injured Desert Tortoise*. If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist or approved Biological Monitor shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the	No later than 2 days following the above required notification of a sighting, kill, or relocation of a listed species, the project owner shall deliver to the CPM, BLM, CDFW, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of injury, kill, or relocation of a listed species, identifying who was notified, and explaining when the incidents occurred. In the case of a sighting in an active construction area, the project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, BLM, CDFW and USFWS. No later than 45 days after initiation of project operation the Designated Biologist shall provide the CPM a Final Listed Species Mitigation Report. Beginning with the first month after clearing, grubbing, and grading are completed and continuing every month until construction is complete, the project owner shall submit a report describing their results of the Monthly Compliance Inspections to the CPM, BLM, USFWS, and CDFW.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
project owner. Following phone notification as required above, the CPM, CDFW, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken. b. *Desert Tortoise Fatality.* If a desert tortoise is killed by project-related activities during construction or operation, submit a written report with the same information as an injury report to the CPM, BLM, the Ontario Office of CDFW, and the Palm Springs Office of USFWS. These desert tortoises shall be salvaged according to guidelines described in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise* (Berry 2001) or most recent guidelines approved by the CPM. The project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident. c. *Avian or bat injury or fatality.* Notifications of injured or dead avian and bat species found onsite must include relevant scientific data such as GPS locations, photographs, observations and other reasonably available information. 5. ***Final Listed Species Report.*** The Designated Biologist or project owner shall provide the CPM and BLM a Final Listed Species Mitigation Report that includes, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of listed species; 3) information about other Project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the Project 6. ***Stop Work Order.*** The CPM may issue the project owner a written stop work order to suspend any activity related to the construction or operation of the project to prevent or remedy a violation of one or more Conditions of Certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The project owner shall comply with the stop work order immediately upon receipt thereof.	
BIO-12: Desert Tortoise Compensatory Mitigation. To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation at a 1:1 ratio for impacts to 3,976 acres, per **BIO-28 – Table 1,** adjusted to reflect the final project footprint. For purposes of this Condition, the project footprint means all lands disturbed in the construction and operation of the Blythe Solar Power Project, including all project linears, as well as undeveloped areas inside the project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the project owner shall acquire, protect and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final project footprint, and provide associated funding for the acquired lands, as specified below. Condition **BIO-27** may provide the project owner with another option for satisfying some or all of the requirements in this Condition. In lieu of acquiring lands itself, the project owner may satisfy the requirements of this Condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this Condition. The timing of the mitigation shall correspond with the timing of the site disturbance activities as stated in **BIO-28** (phasing). If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:	If the mitigation actions required under this Condition are not completed prior to the start of ground-disturbing activities including site mobilization and construction, the project owner shall provide the CPM and CDFW with an approved form of Security in accordance with this Condition of Certification no later than 30 days prior to beginning project ground-disturbing activities, including site mobilization and construction. Actual Security shall be provided no later than 7 days prior to the beginning of project ground-disturbing activities. If Security is provided, the project owner, or an approved third party, shall complete and provide written verification to the CPM, CDFW, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of project ground-disturbing activities, including site mobilization and construction. The project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF or other approved third party by depositing funds for that purpose into NFWF's REAT Account. Initial deposits

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
1. ***Selection Criteria for Compensation Lands.*** The compensation lands selected for acquisition in fee title or in easement shall: i. be within the Colorado Desert Recovery Unit; ii. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed; iii. be prioritized near larger blocks of lands that are either already protected or planned for protection, such as the Chuckwalla DWMA, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation; iv. not have a history of intensive recreational use**,** grazing or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible; v. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; vi. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and vii. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, BLM and USFWS, agrees in writing to the acceptability of land. 2. ***Review and Approval of Compensation Lands Prior to Acquisition.*** The project owner shall submit a formal acquisition proposal to the CPM, ~~CDFG~~**CDFW**, USFWS, and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CPM and CDFW, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels. 3. ***Compensation Lands Acquisition Requirements.*** The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFW, in consultation with BLM and the USFWS, have approved the proposed compensation lands: a. *Preliminary Report.* The project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFW, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board. b. *Title/Conveyance.* The project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFW. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit	for this purpose must be made in the amounts in section 3h of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to the start of ground-disturbing activities for each phase. No fewer than 90 days prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFW, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM and CDFW prior to the acquisition. No fewer than 30 days after acquisition of the property the project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM. The project owner, or an approved third party, shall provide the CPM, CDFW, BLM and USFWS with a management plan for the compensation lands within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW, BLM and the USFWS. Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM, CDFW, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during project construction. This shall be the basis for the final number of acres required to be acquired.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary. If a Security is provided, the project owner or an approved third party shall complete the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities. c. *Initial Habitat Improvement Fund.* The project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFW and the CPM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee. d. *Property Analysis Record.* Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands. e. *Long-term Maintenance and Management Fund.* In accordance with **BIO-28** (phasing), the project owner shall deposit in NFWF's REAT Account or with another CPM-approved entity a non-wasting capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands. The CPM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision. f. *Interest, Principal, and Pooling of Funds.* The project owner, the CPM and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions: a. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands. b. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
c. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a CPM-and CDFW-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.	
g. ***Other expenses.*** In addition to the costs listed above, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.	
h. ***Mitigation Security.*** The project owner shall provide financial assurances in accordance with **BIO-28** (phasing) to the CPM and CDFW with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this Condition. These funds shall be used solely for implementation of the measures associated with the project in the event the project owner fails to comply with the requirements specified in this Condition, or shall be returned to the project owner upon successful compliance with the requirements in this Condition. The CPM's or CDFW's use of the security to implement measures in this Condition may not fully satisfy the project owner's obligations under this condition. Financial assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, BLM and the USFWS, of the form of the Security. Security shall be provided in the amounts of $3,681,687 for Phase 1; $3,234,921 for Phase 2, $3,613,250 for Phase 3, and $3,115,754 for Phase 4. These Security estimates are based on the most current guidance from the REAT agencies (Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010) and may be revised with updated information. This Security estimate reflects the amount that would be required for Security if the project owner acquired the 3976 acres of mitigation lands itself. The actual costs to comply with this condition will vary depending on the final footprint of the project and its four phases, and the actual costs of acquiring, improving and managing the compensation lands.	
i. ***NFWF REAT Account.*** The project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose, which includes a NFWF administrative fee, must be made in the amounts of $3,802,991 for Phase 1, $3,304,650 for Phase 2, $3,691,169 for Phase 3, and $3,182,894 for Phase 4 as the security required in section 3h., above and may be provided in lieu of security**.** If this option is used for the acquisition and initial improvement, the project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than that estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010,* or more current guidance from the REAT agencies, the excess money deposited in the REAT Account shall be returned to the project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the project owner.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
BIO-13: Raven Management Plan. The project owner shall implement a Raven Monitoring, Management**,** and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of the CMP, in consultation with BLM, USFWS and CDFW. The draft Raven Plan submitted by the project owner (AECOM 2010a, Attachment DR-BIO-49) shall provide the basis for the revised draft and final Raven Plan, subject to review, revisions and approval from BLM, the CPM, CDFW and USFWS. The Raven Plan shall include but not be limited to a program to monitor raven presence in the project vicinity, determine if raven numbers are increasing, and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any project-related increases in raven numbers during construction, operation, and decommissioning. In addition**,** the project owner shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below. The Raven Plan shall: a. Identify conditions associated with the project that might provide raven subsidies or attractants; b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities; c. Describe control practices for ravens; d. Establish thresholds that would trigger implementation of control practices; e. Address monitoring and nest removal during construction and for the life of the project, and; f. Discuss reporting requirements. ***USFWS Regional Raven Management Program.*** The project owner shall submit a per phase payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The one time fee shall be as described in the cost allocation methodology (Exhibit 213, *Renewable Energy Development And Common Raven Predation on the Desert Tortoise – Summary*, dated May 2010; *Cost Allocation Methodology for Implementation of the Regional Raven Management Plan*, dated July 9, 2010) or more current guidance as provided by USFWS or CDFW.	At least 45 days prior to any project-related ground disturbance activities, the project owner shall submit the revised draft Raven Plan to the CPM for review and approval and CDFW and USFWS for review and comment. No less than 10 days prior to the start of any project-related ground disturbance activities, including pre-construction site mobilization, the project owner shall provide the CPM, USFWS, and CDFW with the final version of a Raven Plan. The CPM would determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Raven Plan shall be made only with approval of CPM in consultation with USFWS and CDFW. No less than 10 days prior to the start of any project-related ground disturbance, including pre-construction site mobilization activities for each phase of project construction as described in BIO-28, the project owner shall provide documentation to the CPM, BLM, CDFW and USFWS that the one-time fee for the USFWS Regional Raven Management Program of has been deposited to the REAT-NFWS subaccount for the project. Current estimate of the fee for the USFWS Regional Raven Management Program is $105/acre. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Raven Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding. As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.
BIO-14: Weed Management Plan. The project owner shall implement a Weed Management Plan (Plan) that meets the approval of the CPM. The objective of the Plan shall be to prevent the introduction of any new weeds and the spread of existing weeds as a result of project site mobilization, construction, operation, and closure. The draft Weed Management Plan submitted by the previous owner (AECOM 2010a, Attachment DR-BIO-97) shall provide the basis for the final plan, subject to review and revisions from the CPM and the BLM. 1. ***Weed Plan Requirements.*** The project owner shall provide a map to the CPM indicating the location of the Weed Management Area, which shall include all areas within 100 feet of the Project Disturbance Area, access roads, staging and laydown sites, and all other areas subject to temporary disturbance. The project owner shall provide a Plan for the Weed Management Area includes at a minimum the following information: specific weed management objectives and measures for each target non-native weed species; baseline conditions; a map of the Weed Management Areas; map of existing populations of target weeds within 100 feet of the Project Disturbance Area and access roads; weed risk assessment; measures to prevent the introduction and spread of weeds; measures to	No less than 10 days prior to start of any project-related ground disturbance activities including site mobilization and construction, the project owner shall provide the CPM with the final version of a Weed Management Plan that has been reviewed by BLM, and Energy Commission staff, USFWS, and CDFW and approved by CPM. Modifications to the approved Weed Control Plan shall be made only with approval from the CPM in consultation with BLM, USFWS, and CDFW. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
minimize the risk of unintended harm to wildlife and other plants from weed control activities; monitoring and surveying methods; and reporting requirements. Weed control described in the Plan shall focus on prevention, early detection of new infestations, and early eradication for the life of the Project. Weed control along the Project linears shall be limited to the areas where soils were disturbed during construction. Weed monitoring shall occur a minimum of once per year during the early spring months (February-April) to detect seedlings before they set seed. The focus of the Plan shall be on avoiding the introduction of new invasive weeds or the spread of highly invasive species, such as Sahara mustard. Non-native species with low ecological risk, or that are very widespread, such as Mediterranean grass, shall be noted but control shall not be required. When detected, new infestations of high priority species shall be eradicated immediately, if possible. 2. ***Avoidance and Treatment of Dense Weed Populations.*** The Plan shall include a requirement to flag and avoid dense populations of the most invasive non-native weeds during any Project-related construction and operation in or adjacent to infestations. If these areas cannot be avoided, they shall be pre-treated by one of the following methods: a) treating the infested areas in the season prior to construction by removing and properly disposing of seed heads by hand, prior to maturity, or spraying the new crop of plants that emerge in early spring, the season prior to construction, to reduce the viable seed contained in the soil, or b) removing and disposing the upper 2 inches of soil and disposing it offsite at a sanitary landfill or other site approved by the County Agricultural Commissioner, or burying the infested soil, e.g. under the solar facility or in a pit, and covering the infested soil with at least three feet of uncontaminated soil. 3. ***Cleaning Vehicles and Equipment.*** The Plan shall include specifications and requirements for the cleaning and removal of weed seed and weed plant parts from vehicles and equipment involved in Project-related construction and operation. Vehicles and equipment working in weed-infested areas (including previous job sites) shall be required to clean the equipment tires, tracks, and undercarriage *before* entering the Project area and before moving to infested areas of the Project Disturbance Area to uninfested areas. Cleaning shall be conducted on all track and bucket/blade components to adequately remove all visible dirt and plant debris. Cleaning using hand tools, such as brushes, brooms, rakes, or shovels, is preferred. If water must be used, the water/slurry shall be contained to prevent seeds and plant parts from washing into adjacent habitat. 4. ***Safe Use of Herbicides.*** The final Plan shall include detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that will be used on the Project with manufacturer's guidance on appropriate use. The Plan shall indicate where the herbicides will be used, and what techniques will be used to avoid chemical drift or residual toxicity to special-status species and their pollinators, and consistent with the Nature Conservancy guidelines and the criteria under #2, below. Only weed control measures for target weeds with a demonstrated record of success shall be used, based on the best available information from sources such as The Nature Conservancy's The Global Invasive Species Team, California Invasive Plant Council: http://www.cal-ipc.org/ip/management/plant_profiles/index.php, and the California Department of Food & Agriculture Encycloweedia: http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/encycloweedia_h p.htm. 5. The methods for weed control described in the final Plan shall meet the following criteria: a. *Manual*: Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.	As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of noxious weeds surveys and management activities for the year; a discussion of whether weed management goals for the year were met; and recommendations for weed management activities for the upcoming year.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
a. *Chemical*: Herbicides known to have residual toxicity, such as pre-emergents and pellets, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack and squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations (see Nature Conservancy guidelines described above); b. *Biological*: Biological methods may be used subject to review and approval by CDFW and USFWS and only if approved for such use by CDFA, and are either locally native species or have no demonstrated threat of naturalizing or hybridizing with native species; c. *Mechanical*: Disking, tilling, and mechanical mowers or other heavy equipment shall not be employed in natural areas but hand weed trimmers (electric or gas-powered) may be used. Mechanical trimmers shall not be used during periods of high fire risk and shall only be used with implementation of fire prevention measures.	
BIO-15: Avian and Bat Protection Plans. The project owner shall prepare a Bird and Bat Conservation Strategy (BBCS) and submit it to the CPM for review and approval, in consultation with BLM, CDFW, and USFWS for review and comment. The BBCS shall provide for the following: 1. Survey and monitor onsite avian use and behavior prior to commencing construction to document species composition. The project owner will submit all data gathered onsite to the CPM as specified herein and within the BBCS, or as requested by the CPM, and will also make consulting biologists available to answer CPM inquiries. 2. Implement a statistically robust avian and bat mortality and injury monitoring program to identify the extent of potential avian or bat mortality or injury from collisions with facility structures, including: assessing levels of collision-related mortality and injury with PV panels. The plan shall dictate which project features should be monitored and the frequency of monitoring, and shall also prescribe survey design based on sound scientific hypotheses, with the goal of fully monitoring and evaluating project effects. 3. Implement an adaptive management and decision-making framework for reviewing, characterizing, and responding to mortality monitoring results. 4. Identify specific conservation measures and/or programs to avoid, minimize, reduce or eliminate CEQA significant adverse impacts over time and evaluate the effectiveness of those measures. 5. Describe project owner responsibility for funding rehabiliatory care and transport for injured birds or bats, and determine appropriate measures to treat injured birds and bats. ***BBCS Components*** The BBCS shall minimally include the following components: 1. Preconstruction Baseline survey results. A description and summary of the baseline survey methods, raw data, and results. 2. Formation of a technical advisory committee (TAC), if requested by the CPM. The TAC will facilitate concurrent project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results, development of decision-making framework for evaluating the effectiveness of the adaptive management	Prior to the start of construction, a draft BBCS shall be submitted to the CPM for review and comment in consultation with CDFW, BLM, and USFWS. A final BBCS shall be submitted to the CPM within 60 days of construction commencement. The project owner shall provide the CPM with copies of any written or electronic transmittal from the USFWS, BLM, or CDFW related to the BBCS within 30 days of receiving any such transmittal. **Reporting Protocol:** Verification of Survey Results (including preconstruction bird and bat use, mortality monitoring, and golden eagle monitoring): All survey results and complete reports, including raw data, shall be submitted to the CPM after each survey season and in an annual summary report throughout the course of the study period, or as otherwise directed by the CPM. The results of onsite injury and mortality monitoring will be reported monthly or more frequently, if requested by the CPM. The reports will include all data required as part of the monitoring program. Post-construction monitoring studies included in the BBCS shall be for at least two years following commencement of commercial operation of each individual unit. The BBCS shall define the circumstances under which additional years of monitoring would be necessary. The Monitoring Study shall continue until the CPM, in consultation with CDFW, BLM, and USFWS, using the criteria included in the BBCS, concludes that the cumulative monitoring data provide sufficient basis for estimating long-term bird mortality for the project. The reports will include all monitoring data required as part of the monitoring program. The reports shall also assess any adaptive management measure implemented during the prior year as approved by the CPM. After the second year of the monitoring program, the CPM shall meet and confer with the TAC (if convened) and shall use the criteria contained in the BBCS to determine if subsequent monitoring periods are warranted.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
measures implemented by the project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies. A meeting schedule for the TAC will be identified, for regular review of avian and bat injury and mortality monitoring results, and recommend any necessary changes to monitoring, adaptive management, and appropriate adaptive mitigation. The TAC will also advise the CPM in implementing the following provisions: #2 - #8. The CPM has the authority to dissolve the TAC. 3. The BBCS will contain full survey methodology and field documentation, identification of appropriate survey locations and seasonal considerations. Bat surveying may be implemented, if the TAC or CPM determines that such surveying is necessary, based on onsite monitoring. 4. Avian and bat mortality and injury monitoring: An avian and bat injury and mortality monitoring program shall be implemented, including: (a) Onsite monitoring that will systematically survey representative locations within the facility, at a level that will produce statistically robust data; account for potential spatial bias and allow for the extrapolation of survey results to non-surveyed areas within the solar plant site boundary and the survey interval based on scavenger and searcher efficiency trials and detection rates. (b) Low-visibility and high-wind weather event reporting to document potential weather-related collision risks that may be associated increased risk of avian or bat collisions with project features, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events (40 miles per hour winds) are sustained for period of greater than 4 hours. (c) Statistically robust scavenger and searcher efficiency trials post construction to document the extent to which avian or bat fatalities remain visible over time and can be detected within the project area and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates. (d) Statistical methods used to generate facility estimates of post-construction potential avian and bat impacts based on the observed number of detections during standardized searches during the monitoring season and methods used to report avian and bat impacts during construction. (e) Field detection and mortality or injury identification, cause attribution, handling and reporting protocols consistent with applicable legal requirements; **all** dead or injured bats and avian species found onsite will be assumed affected by the project, and all will be reported and used in fatality estimates. 5. Survey schedule and period. Post-construction monitoring studies included in the BBCS shall be for at least two years following commencement of commercial operation of each individual unit. The BBCS shall define the circumstances under which additional years of monitoring would be necessary. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS. 6. Adaptive management. An adaptive management program shall be developed to identify and implement reasonable and feasible measures needed to reduce CEQA-significant levels of avian or bat mortality or injury adverse impacts attributable to project operations and facilities. Any such impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or	If a carcass or injured live special status species is found at any time by the monitoring study or project operations staff, the project owner, Designated Biologist, or other qualified biologist that may be identified by the Designated Biologist shall contact the CPM, CDFW and USFWS by email, fax or other electronic means within one working day of any such detection. Verification of other injuries or mortalities shall be within 48 hours, or as otherwise directed by the CPM.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
bat mortality or injury that is specifically and clearly attributable to the project facilities. Adaptive actions undertaken will be discussed and evaluated in survey reports. The adaptive management program shall include the following elements: (a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the project. (b) Potential measures that the project owner could implement to adaptively respond to detected mortality and injuries attributable to the project, including passive avian diverter installations along the perimeter or at other locations within the project to avoid site use, the use of sound, light or other means to discourage site use consistent with applicable legal requirements, onsite prey or habitat control measures consistent with applicable legal requirements, and additional perch and nest minimizing of project facilities. 7. Adaptive Mitigation: The CPM may require the project owner to implement adaptive mitigation for CEQA significant onsite injury or mortality of birds and bats, based on recommendations of the TAC**,** if utilized, or as outlined within the BBCS. Any such adaptive mitigation measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or bat mortality or injury that is specifically and clearly attributable to the project facilities. Adaptive mitigation measures undertaken will be discussed and evaluated in survey reports. Such measures shall be approved by the CPM and may include, but not be limited to: (i) restoration of degraded habitat with native vegetation; (ii) restoration of agricultural fields to bird habitat; (iii) management of agricultural fields to enhance bird populations; (iv) invasive plant species and artificial food or water source management; (v) control and cleanup of potential avian hazards, such as lead or microtrash; (vi) retrofitting of buildings to minimize collisions; (vii) retrofitting of conductors and above ground cables to minimize collisions; (viii) animal control programs; (ix) support for avian and bat research and/or management efforts conducted by entities approved by the CPM within the project's mitigation lands or other approved locations; (x) funding efforts to address avian diseases or depredation due to the expansion of predators in response to anthropomorphic subsidies that may adversely affect birds that use the mitigation lands or other approved locations; and (xi) contribute to the Migratory Bird Conservation Fund managed by the Migratory Bird Conservation Commission. Adaptive mitigation will be discussed and evaluated in survey reports.	
BIO-16: Pre-Construction Nest Surveys and Avoidance Measures. Pre-construction nest surveys shall be conducted if site mobilization and construction, mowing, trimming, or any vegetation maintenance activities would occur from February 1 through July 31. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. Surveyors performing nest surveys shall not concurrently be conducting desert tortoise surveys. The bird surveyors shall perform surveys in accordance with the following guidelines: 1. Surveys shall cover all potential nesting habitat areas that could be disturbed by each phase of construction, as described in **BIO-28** (Phasing). Surveys shall also include areas within 500 feet of the boundaries of the active construction areas (including linear facilities); 2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within a 14-day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;	At least 10 days after surveys are completed, the project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor (s); and a list of species observed. If active or suspected active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest or suspected nest location and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during project construction. Each year during construction as part of the annual compliance report a follow-up report shall be provided to the CPM, BLM, CDFW, and USFWS describing the success of the buffer zones in preventing disturbance to nesting activity and a brief description of the outcome of the nesting effort (for example, whether young were successfully fledged from the nest or if the nest failed).

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
3. During operations and maintenance prior to mowing and any other vegetation maintenance during the nesting season, (February 1 through July 31) a single, surveys shall be conducted within 7 days of construction or maintenance activity to determine whether birds are nesting in the vegetation on site; 4. If active nests or suspected active nests are detected during the survey (including mowing and vegetation maintenance surveys during operations), a buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFW) and monitoring plan shall be developed, in coordination with the CPM. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the CPM; and 5. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed; activities that might, in the opinion of the Designated Biologist, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.	
BIO-17: American Badger and Desert Kit Fox Impact Avoidance and Minimization Measures. The project owner shall contract a qualified biologist to conduct a baseline pre-construction desert kit fox and American badger survey and develop and implement an American Badger and Desert Kit Fox Mitigation and Monitoring Plan (Plan). The survey data will be used to revise the final Plan, as necessary, with the most recent species data from the project site. The project owner shall conduct a baseline kit fox survey and submit a summary report that includes the following procedures: 1. A qualified biologist with demonstrated mammal experience shall complete a baseline pre-construction survey of desert kit fox and American badger populations on the project site and the anticipated dispersal areas for passive relocation between 30 and 60 days prior to initiation of any ground disturbing activities, not including installation of perimeter/desert tortoise fencing. Surveys of the solar plant site may be conducted after the perimeter fence is installed and concurrently with desert tortoise clearance surveys. The anticipated dispersal areas shall be defined as all suitable desert kit fox habitat within 500 meters of the project boundaries where desert kit fox would likely be displaced. The survey shall identify and record the locations of all potential dens throughout the project site (or phase) and shall characterize the approximate number and distribution of the badger and kit foxes on the site and anticipated dispersal areas. Depending on the season of the surveys (i.e. breeding or non-breeding) other demographic data will be. Approximately 30 to 60 days prior to installation of perimeter/desert tortoise fencing, a pre-construction survey for kit foxes will be conducted along the fenceline route. Depending on the fox breeding season, the width of the surveyed route and buffers may vary, as described in the approved Plan. The baseline pre-construction survey shall include the following components: a. An inventory and mapped locations of desert kit fox dens and burrows on the project site (including all project disturbance areas) and in the anticipated dispersal areas, and an evaluation whether each burrow is occupied, and reproductive status of kit foxes (single animal, mated pair, or family group with young), if known. If status unknown measures as required under Item 2b, below, will be implemented. b. Reporting: The project owner shall provide a draft Summary Report of the Baseline American Badger and Desert Kit Fox Survey to the CPM and BLM for review in consultation with CDFW. The project owner and the project owner's Designated Biologist shall consult with the CPM and BLM on any changes to the final Plan that would result from the baseline pre-construction survey data provided in the Summary Report. The project owner shall not implement the American Badger and Desert Kit Fox Mitigation and Monitoring Plan (below) until receiving the CPM and BLM's written approval of the final Plan.	No fewer than 90 days prior to the start of any, site mobilization and construction the project owner shall provide the CPM, BLM, and CDFW with a draft American Badger and Desert Kit Fox Mitigation and Monitoring Plan for review and comment. Approximately 30 to 60 days prior to initiation of site mobilization and construction activities, not including perimeter/desert tortoise fencing, a qualified biologist with demonstrated mammal experience shall complete a baseline study of American badger and desert kit fox populations on the project site and the anticipated dispersal areas for passive relocation. Approximately 30 to 60 days prior to installation of perimeter/desert tortoise fencing, a pre-construction survey for kit foxes shall be conducted along the fenceline route. The project owner shall submit a summary report to the CPM, BLM and CDFW within 7 days of completion of any badger and kit fox surveys. The report shall describe survey methods and results of the surveys. The project owner and the Designated Biologist shall consult with the CPM and BLM upon submitting the summary report regarding any changes to the final Plan. No fewer than 15 days prior to start of any site mobilization and construction, the project owner shall provide an electronic copy of the CPM-approved final Plan to the CPM, BLM and CDFW and implement the Plan. No later than 24 hours following a phone notification of an injured, sick, or dead American badger or desert kit fox, the project owner shall provide to the CPM, BLM and CDFW, via FAX or electronic communication, a written report from the Designated Biologist describing the incident of sickness, injury, or death of an American badger or desert kit fox, when the incident occurred, and who else was notified. Beginning with the first month after start of construction and continuing every month until construction is completed, the Designated Biologist shall include a

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
The objective of the plan shall be to avoid direct impacts to the American badger and desert kit fox as a result of site mobilization and construction of the power plant and linear facilities, as well as during project operation and non-operation and closure. The final plan is subject to review and comment by BLM and revision and approval by the CPM, in consultation with CDFW. The final Plan shall include, but is not limited to, the following procedures and impact avoidance measures: 2. Describe pre-construction survey and clearance field protocol, to determine the number and locations of single or paired kit foxes or badgers on the project site that would need to be avoided or passively relocated and the number and locations of desert kit fox or badger burrows or burrow complexes that would need to be collapsed to prevent re-occupancy by the animals. a. *Pre-Construction Surveys. A baseline, preconstruction survey shall be conducted as described above under Item 1.* Surveys may be concurrent with desert tortoise and burrowing owl surveys to the extent it does not conflict with desert tortoise and burrowing owl agency protocols. Depending on the timing of the project phases and time between phases, surveys may need to be conducted for each phase of construction Options for timing of surveys shall be detailed in the Plan. If dens are detected during the survey(s), each den shall be classified as inactive, potentially active, definitely active den, or natal den. b. *Monitoring and Protection Measures, Passive Hazing, and Den Excavation:* The plan will include details on monitoring requirements, types and methods of passive hazing, and methods and timing of den excavation, including, but not limited to the following: i. Inactive dens. Inactive dens [e.g. inactive dens are dens that are mostly or entirely silted in and ones in which the back of the den can be clearly seen (e.g., the den isn't deep and doesn't curve)] that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badger or kit fox. Only outside the whelping/pup rearing season as defined in the kit fox plan, dens that are determined to be inactive based on vegetation, debris or soil conditions, indicating to an experienced field biologist that the den is not being used, can be excavated by hand in the early evening. ii. Potentially and definitely active dens. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. If the den is proven inactive then den may be collapsed during whelping season. BLM approval may be required prior to release of badgers on public lands. iii. Active natal/pupping dens. If an active natal den (a den with pups) is detected on the site, the project owner shall proceed to implement the approved Plan and shall also notify the BLM, CPM, and CDFW within 24 hours. If the situation is unusual and/or not addressed by the approved Plan, then the project owner's biologist shall consult with the CPM,BLM, and CDFW to determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g. is the den in a central area or in a perimeter location), status of	summary of events regarding the American badger and desert kit fox in each Monthly Compliance Reports (MCR). The impact avoidance and minimization measure(s) implemented and the results of implementation of those measures shall be reported in each MCR. No later than 45 days after initiation of project operation, the Designated Biologist shall provide the CPM and BLM a final American Badger and Desert Kit Fox Mitigation and Monitoring Plan Report that includes: 1) a discussion of all mitigation measures that were and currently are being implemented; 2) all information about project-related kit fox and badger injuries and/or deaths; 3) all information regarding sick kit fox and badger found within the project site and along related linear facilities; and 4) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the American badger and desert kit fox. Within 30 days of participation in the CDFW led fee based Monitoring and Mitigation Program during site mobilization and construction or operation the project owner will submit a revised Plan that includes the program information related to the project and confirmation that all fees are paid.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around all active dens. The denning season for American badger is approximately March to August, and for desert kit fox the denning season is approximately Mid-January to pup independence typically by July 1 (or earlier with confirmation of pup independence based on monitoring data). If the den is active during the whelping season, even if pups are not seen, disturbance is not allowed. Active natal/pupping dens will not be excavated or passively relocated. c. *Exception for American badger.* In the event that passive relocation techniques fail for badgers, outside the denning season, or during the denning season if individual badgers can be verified to not have a litter, then live-trapping by a CDFW and CPM approved trapper is an option that may be employed to safely perform active removal as a last resort. A live-trapping plan including trapping methods as well as the name and resume, including documentation of relevant handling permits of the proposed trapper, would be included in detail as part of the approved Plan. In the event live-trapping would be employed as a last resort, written notification would be submitted to the CPM for review and approval in consultation with BLM and CDFW. The CPM, BLM and CDFW would be notified in writing no less than 1 week prior to live trapping of badger. The notification would at a minimum include what passive relocation methods have been attempted to date and the justification for live-trapping as a last resort. In addition timing, and location of release of the individual badger as well as the name of the proposed trapper and resume, including documentation of relevant handling permits if not previously included and approved in the Plan shall be included in the notification. BLM approval may be required prior to release of badgers on public lands. 3. Address other factors and procedures that may affect the success of kit fox and American badger relocation offsite, such as: a. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and evaluation of kit fox burrows with 500 meters of the project boundary, in areas where onsite foxes may disperse (e.g., by inventorying burrow numbers in selected representative sample areas) as identified in the pre-construction surveys above; b. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site; c. Proposed scheduling of the passive relocation effort; d. Methods to minimize likelihood that the animals will return to the project site; e. Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation, and locations of those activities (e.g., artificial burrow construction); f. A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and g. A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences). 4. Address notification procedures for notifying the CPM, BLM and CDFW if injured, sick, or dead badger or kit fox are detected. Notify the CPM, BLM and CDFW if injured, sick, or dead American badger and desert kit fox are found. If an injured, sick, or dead animal is detected on any area associated with the solar project site or	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
associated linear facilities, the CPM, BLM Palm Springs/ South Coast Field Office and the Ontario CDFW Office as well as the CDFW Wildlife Investigation Lab (WIL) shall be notified immediately by phone (8 hours in the case of a fatality). Written follow-up notification via FAX or electronic communication shall be submitted to the CPM, BLM and CDFW within 24 hours of the incident and shall include the following information as appropriate: a. *Injured animals.* If an American badger or desert kit fox is injured because of any project-related activities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW personnel regarding the capture and transport of the animal to CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the injured animal, if it recovers. A written notification of the incident shall be sent to the CPM, BLM and CDFW containing, at a minimum, the date, time, location, and circumstances of the incident. b. *Sick animals.* If an American badger or desert kit fox is found sick and incapacitated on any area associated with the project site or associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM, BLM and CDFW personnel for immediate capture and transport of the animal to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the sick animal, if it recovers. If the animal dies, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death, in accordance with measure “c”, below. c. *Fatalities.* If an American badger or desert kit fox is killed because of any project-related activities during construction, operation, and decommissioning or is found dead on the project site or along associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately refrigerate the carcass and notify the CPM, BLM and CDFW personnel within 24 hours (8 hours in the case of desert kit fox) of the discovery to receive further instructions on the handling of the animal. Handling of a dead kit fox shall follow the Guidelines for Handling a Desert Kit Fox Carcass (CDFW WIL) or most recent guidance. A necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed. 5. Additional protection measures to be included in the Plan and implemented: a. All pipes within the project disturbance area outside the solar plant site, or inside the solar plant site if foxes are still on the site, must be fenced, capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes and/or monitored. b. All project-related water sources shall be covered and secured when not in use to prevent drowning. c. The project owner shall coordinate with CDFW to identify any additional fence design features to maximize the effectiveness of the fence to exclude kit foxes from the project. d. Incorporate and implement the CDFW Veterinarian’s guidance regarding impact avoidance measures including measures to prevent disease spread among desert kit foxes. e. Include measures to reduce traffic impacts to wildlife if the project owner anticipates night-time construction. The plan must also include a discussion of what information will be provided to all night-time workers, including truck drivers, to educate them about the threats to kit fox, what they need to do to avoid impacts to kit fox, and what to report if they see a live, injured, or dead kit fox.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
f. In order to reduce the likelihood of distemper transmission: a. No pets shall be allowed on the site prior to or during site mobilization and construction, operation, and non-operation and closure, with the possible exception of vaccinated kit fox scat detection dogs during preconstruction surveys, and then only with prior CPM and CDFW approval; b. Any hazing activities that include the use of chemical or other repellents (e.g. ultrasonic noise makers, or non-animal-based chemical repellents) must be cleared through the CPM and CDFW prior to use. The use of animal tissue or excretion based repellents (e.g. coyote urine, anal gland products) is not permitted. c. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to the CPM, CDFW, and the BLM immediately upon identification (within 8 hours for mortality). If a dead kit fox is observed, it shall be collected and stored according to established protocols distributed by CDFW WIL, and the WIL shall be contacted to determine carcass suitability for necropsy. 6. The project owner may opt to participate in the CDFW led fee based Monitoring and Mitigation Program if in place prior to start of site mobilization and construction in lieu of implementation of certain items in 3i, 3j, 5a, 5b, 5d, 5f above. This includes financial responsibility for transportation and necropsy of desert kit fox mortalities due to project-related activities or sick animals found on or near the project site or associated linears as well as measures to address other factors and procedures that may affect the success of kit fox and American badger relocation offsite. If in place, the CDFW Monitoring and Mitigation Program activities associated with the Project and associated fees will be fully described in the final Plan. The project owner may also opt to participate in the program if established at a later date during site mobilization and construction or operation and will submit a revised Plan that includes the program information when established and confirmation that fees are paid.	
BIO-18: Burrowing Owl Impact Avoidance, Minimization, and Compensation Measures. The project owner shall implement the following measures to avoid, minimize and offset impacts to burrowing owls: 1. ***Pre-Construction Surveys.*** The Designated Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days prior to initiation of site mobilization and construction activities in accordance with CDFW guidelines (CDFW 2012). Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to 1 hour after or from 1 hour before to 2 hours after sunrise. The survey area shall include the Project Disturbance Area and surrounding 500 foot survey buffer for each phase of construction in accordance with **BIO-28** (phasing). 2. ***Implement Burrowing Owl Mitigation Plan.*** The project owner shall implement measures described in the final Burrowing Owl Mitigation Plan. The final Burrowing Owl Mitigation Plan shall be approved by the CPM, in consultation with BLM, USFWS and CDFW, and shall: a. identify suitable sites within 1 mile of the Project Disturbance Areas for creation or enhancement of burrows prior to passive relocation efforts; b. provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl; design of the artificial burrows shall be consistent with CDFW guidelines (CDFW 2012); c. provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area; and	If pre-construction surveys detect burrowing owls within the Project Disturbance Area and relocation of the owls is required, within 30 days of completion of the burrowing owl pre-construction surveys the project owner shall submit to the CPM, BLM, CDFW, and USFWS a Burrowing Owl Mitigation Plan. The Burrowing Owl Mitigation Plan shall identify suitable areas for construction of burrows and the other passive relocation as described above. As part of the Annual Compliance Report each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, BLM, USFWS and CDFW that describes the results of monitoring and management of the burrowing owl burrow creation or enhancement area(s). If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, at least 10 days prior to the start of any project-related site disturbance activities the Designated Biologist shall provide to the CPM, BLM, CDFW, and USFWS documentation indicating that non-disturbance buffer fencing has been installed as described above. The project owner shall report monthly to BLM, the CPM, CDFW and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
d. describe monitoring and management of the passive relocation effort, including the created or enhanced burrow location and the project area where WBO were relocated from and provide a reporting plan. 3. ***Implement Avoidance Measures.*** If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented: a. *Establish Non-Disturbance Buffer.* Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer. b. *Monitoring:* If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1 – August 31st) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance. 4. ***Acquire 39 Acres of Burrowing Owl Habitat.*** The project owner shall acquire, in fee or in easement 39 acres of land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with BLM, CDFW and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. 1. *Criteria for Burrowing Owl Mitigation Lands.* The terms and Conditions of this acquisition or easement shall be as described in **BIO-12** [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) the 39 acres of mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owl (generally approximately five miles). The 39 acres of burrowing owl mitigation lands may be included with the desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the 39 acres of burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the project owner shall fulfill the requirements described below in this Condition. 2. *Security.* If the 39 acres of burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the project owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this Condition). Alternatively, financial assurance can be provided by the project owner to the CPM and CDFW, according to the measures outlined in **BIO-12**. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with BLM, CDFW and the USFWS, to ensure funding. The final amount due will be determined by an updated appraisal and PAR analysis conducted as described in **BIO-12**.	The project owner shall report monthly to BLM, the CPM, CDFW and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the project owner shall provide to the CDFW and CPM a written report identifying how mitigation measures described in the plan have been completed. No less than 30 days prior to the start of site mobilization and construction activities the project owner shall provide the CPM with an approved form of Security in accordance with this condition of certification. Actual Security for acquisition of 39 acres of burrowing owl habitat shall be provided no later than 7 days prior to the beginning of site mobilization and construction activities. No fewer than 90 days prior to the land or easement purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFW, BLM, and USFWS, for the compensation lands and associated funds. No later than 18 months from initiation of construction, the project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
BIO-19: Special-Status Plant Impact Avoidance, Minimization and Compensation. This Condition contains the following four sections: 1. ***Section A: Special-Status Plant Impact Avoidance and Minimization Measures*** contains the Best Management Practices and other measures designed to avoid accidental impacts to plants occurring outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area during construction, operation, and closure. 2. ***Section B: Conduct Late Season Botanical Surveys*** describes guidelines for conducting summer-fall 2010 surveys to detect special-status plants that would have been missed during the spring 2010 surveys. 3. ***Section C: Avoidance Requirements for Special-Status Plants*** Detected **in the Summer/Fall 2010 Surveys** outlines the level of avoidance required for plants detected during the summer-fall surveys, based on the species' rarity and status codes. 4. ***Section D: Off-Site Compensatory Mitigation for Special-Status Plants*** describes performance standards for mitigation for a range of options for compensatory mitigation through acquisition, restoration/enhancement, or a combination of acquisition and restoration/enhancement. "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation. The project owner shall implement the following measures in Section A, B, C, and D to avoid, minimize, and compensate for impacts to special-status plant species: A. **Section A: Special-Status Plant Impact Avoidance and Minimization Measures** To protect all special-status plants[4] located outside of the Project Disturbance Area and within 100 feet of the permitted Project Disturbance Area from accidental and indirect impacts during construction, operation, and closure, the project owner shall implement the following measures: 1. *Designated Botanist*. An experienced botanist who meets the qualifications described in Section B-2 below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this Condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. During operation of the project, the Designated Biologist shall be responsible for protecting special-status plant occurrences within 100 feet of the project boundaries. 2. *Special-Status Plant Impact Avoidance and Minimization Measures*. The project owner shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (**BIO-7**). These measures shall include the following elements:	The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification **BIO-7**. Raw GPS data, metadata, and CNDDB field forms shall be submitted to the CPM within two weeks of the completion of each survey. A preliminary summary of results for the late summer/fall botanical surveys shall also be submitted to the CPM and BLM's State Botanist within two weeks following the completion of the surveys. If surveys are split into more than one period, then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report, GIS shape files and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of ground-disturbing activities. The Final Report shall include a detailed accounting of the acreage of project impacts to special-status plant occurrences. The draft conceptual Special-Status Plant Mitigation Plan shall be submitted to the CPM for review and approval no less than 30 days prior to the start of ground-disturbing activities. The project owner shall immediately provide written notification to the CPM, CDFG, USFWS, and BLM if it detects a State- or Federal-Listed Species, or BLM Sensitive Species at any time during its late summer/fall botanical surveys or at any time thereafter through the life of the project, including conclusion of project decommissioning. No fewer than 30 days prior to the start of ground-disturbing activities the project owner shall submit grading plans and construction drawings to the CPM which depict the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition. If compensatory mitigation is required, no less than 30 days prior to the start of ground-disturbing activities, the project owner shall submit to the CPM the form of Security adequate to acquire compensatory mitigation lands and/or undertake habitat enhancement or restoration activities, as described in this Condition. Actual Security shall be provided seven days prior to start of ground-disturbing activities. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the project owner shall submit a formal acquisition proposal and draft Management Plan for the proposed lands to the CPM, with copies to CDFG,

[4] Staff defines special-status plants as described in *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (California Natural Resources Agency, Department of Fish and Game, issued November 24, 2009).

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
a. Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the project linears: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW. Design the engineered channel discharge points to maintain the natural surface drainage patterns between the engineered channel and the outlet of the natural washes that flow toward the south and east, downstream of the project These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP. b. Establish Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, the Designated Botanist shall establish ESAs to protect avoided special-status plants that occur outside of the Project Disturbance Areas and within 100 feet of Project Disturbance Areas. This includes plant occurrences identified during the spring 2009-2010 surveys and the late season 2010 surveys. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and sediment controls, may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the uphill side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure. c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP **(BIO-6)** shall include training components specific to protection of special-status plants as outlined in this Condition. d. Herbicide and Soil Stabilizer Drift Control Measures. **S**pecial-status plant occurrences within 100 feet of the Project Disturbance Area shall be protected from herbicide and soil stabilizer drift. The Weed Control Program (**BIO-14**) shall include measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's *The Global Invasive Species Team*[5], the U.S. Environmental Protection Agency, and the Pesticide Action Network Database[6]. e. Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL&WATER-1**. f. Avoid Special-Status Plant Occurrences. Areas for spoils, equipment, vehicles, and materials storage areas; parking; equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from any ESAs.	USFWS, and BLM, describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented within 18 months of the start of ground disturbance. No fewer than 30 days after acquisition of the property the project owner shall deposit the funds required by Section I e above (long term management and maintenance fee) and provide proof of the deposit to the CPM. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM of such completion no later than 18 months after the start of project ground-disturbing activities. If NFWF or another approved third party is being used for the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline. If habitat enhancement is proposed, no later than six months following the start of ground-disturbing activities, the project owner shall obtain CPM approval of the final Habitat Enhancement/Restoration Plan, prepared in accordance with Section D, and submit to the CPM or a third party approved by the CPM Security adequate for long-term implementation and monitoring of the Habitat Enhancement/Restoration Plan. Enhancement/restoration activities shall be initiated no later than 12 months from the start of construction. The implementation phase of the enhancement project shall be completed within five years of initiation. Until completion of the five-year implementation portion of the enhancement action, a report shall be prepared and submitted as part of the Annual Compliance Report. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the project's progress in meeting the enhancement project success criteria; detailed description of remedial actions taken or proposed; and contact information for the responsible parties. If a Distribution Study is implemented as contingency mitigation, the study shall be initiated no later than 6 months from the start of construction. The implementation phase of the study shall be completed within two years of the start of construction.

[5] Hillmer, J. & D. Liedtke. 2003. Safe herbicide handling: a guide for land stewards and volunteer stewards. Ohio Chapter, The Nature Conservancy, Dublin, OH. 20 pp. Online: <http://www.invasive.org/gist/products.html.
[6] Pesticide Action Network of North America. Kegley, S.E., Hill, B.R., Orme S., Choi A.H., PAN Pesticide Database, Pesticide Action Network, North America. San Francisco, CA, 2010 <http://www.pesticideinfo.org>

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
g. Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities. B. **Section B: Conduct Late-Season Botanical Surveys** The project owner shall conduct late-summer/fall botanical surveys for late-season special-status plants prior to start of construction or by the end of 2010, as described below: 1. *Survey Timing*. Surveys shall be timed to detect: a) summer annuals triggered to germinate by the warm, tropical summer storms (which may occur any time between June and October). Fall-blooming perennials that respond to the cooler, later season storms (typically beginning in September or October) shall only be required if blooms and seeds are necessary for identification or the species are summer-deciduous and require leaves for identification. The surveys shall not be timed to coincide with the statistical peak bloom period of the target species but shall instead be based on plant phenology and the timing of a significant storm event (i.e., a 10mm or greater rain or multiple storm events of sufficient volume to trigger germination, as measured at or within one mile of the project site). Surveys shall occur at the appropriate time to capture the characteristics necessary to identify the taxon. Construction of Phase 1A as outlined in Condition of Certification **BIO-28** is authorized to commence following a September survey. 2. *Surveyor Qualifications and Training*. Surveys shall be conducted by a qualified botanist knowledgeable in the complex biology of the local flora, and consistent with CDFG protocols (CDFG 2009). Each surveyor shall be equipped with a GPS unit and record a complete tracklog; these data shall be compiled and submitted along with the Summer-Fall Survey Botanical Report (described below). Prior to the start of surveys, all crew members shall, at a minimum, visit reference sites (where available) and/or review herbarium specimens of all BLM Sensitive plants, CNPS List 1B or 2 (Nature Serve rank S1 and S2) or proposed List 1B or 2 taxa, and any new reported or documented taxa, to obtain a search image. Because the potential for range extensions is unknown, the list of potentially occurring special-status plants shall include all special-status taxa known to occur within the Sonoran Desert region and the eastern portion of the Mojave in California. The list shall also include taxa with bloom seasons that begin in fall and extend into the early spring as many of these are reported to be easier to detect in fall, following the start of the fall rains. 3. *Survey Coverage*. The survey coverage or intensity shall be in accordance with BLM Survey Protocols (issued July 2009)[7], which specify that intuitive controlled surveys shall only be accomplished by botanists familiar with the habitats and species that may reasonably be expected to occur in the project area. 4. *Documenting Occurrences*. If a special-status plant is detected, the full extent of the population onsite shall be recorded using GPS in accordance with BLM survey protocols. Additionally, the extent of the population within one mile of project boundaries shall be assessed at least qualitatively to facilitate an accurate estimation of the proportion of the population affected by the project. For populations that are very dense or very large, the population size may be estimated by simple sampling techniques. When populations are very extensive or locally abundant, the surveyor must provide some basis for this assertion and roughly map the extent on a topographic map. All but the smallest populations (e.g., a population occupying less than 100 square feet) shall be recorded as area polygons; the smallest populations may be recorded as point features. All GPS-recorded	Within 18 months of ground-disturbing activities, the project owner shall transfer to the CPM or an approved third party the difference between the Security paid and the actual costs of (1) acquiring compensatory mitigation lands, completing initial protection and habitat improvement, and funding the long-term maintenance and management of compensatory mitigation lands; and/or (2) implementing and providing for the long-term protection and monitoring of habitat enhancement or restoration activities. Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed. The project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, completed CNDDB field forms for each avoided occurrence on-site and within 100 feet of the project boundary off-site, and description of the remedial action, if warranted and planned for the upcoming year. The completed forms shall include an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends.

[7] Bureau of Land Management (BLM), California State Office. Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species. Issued July 2009.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
occurrences shall include: the number of plants, phenology, observed threats (e.g., OHV or invasive exotics), and habitat or community type. The map of occurrences submitted with the final botanical report shall be prepared to ensure consistency with definition of an occurrence by CNDDB, i.e., occurrences found within 0.25 miles of another occurrence of the same taxon, and not separated by significant habitat discontinuities, shall be combined into a single 'occurrence'. The project owner shall also submit the raw GPS shape files and metadata, and completed CNDDB forms for each 'occurrence' (as defined by CNDDB). 5. *Reporting*. Raw GPS data, metadata, and CNDDB field forms shall be provided to the CPM within two weeks of the completion of each survey. If surveys are split into two or more periods (e.g., a late summer survey and a fall survey), then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report shall be prepared consistent with CDFG guidelines (CDFG 2009), and BLM 2009 guidelines and shall include all of the following components: a. the BLM designation, NatureServe Global and State Rank of each species or taxon found (or proposed rank, or CNPS List); b. the number or percent of the occurrence that will be directly affected, and indirectly affected by changes in drainage patterns or altered geomorphic processes; c. the habitat or plant community that supports the occurrence and the total acres of that habitat or community type that occurs in the Project Disturbance Area; d. an indication of whether the occurrence has any local or regional significance (e.g., if it exhibits any unusual morphology, occurs at the periphery of its range in California, represents a significant range extension or disjunct occurrence, or occurs in an atypical habitat or substrate); e. a completed CNDDB field form for every occurrence (occurrences of the same species within one-quarter mile or less of each other combined as one occurrence, consistent with CNDDB methodology), and f. two maps: one that depicts the raw GPS data (as collected in the field) on a topographic base map with project features; and a second map that follows the CNDDB protocol for occurrence mapping. C. **Section C: Avoidance Requirements for Special-Status Plants Detected in the Summer/Fall 2010 Surveys** The project owner shall apply the following avoidance standards to late blooming special-status plants that might be detected during late summer/fall season surveys. Avoidance and/or the mitigation measures described in Section D below would reduce impacts to these special-status plant species to less than significant levels. 1. *Mitigation for CNDDB Rank 1 Plants (Critically Imperiled) - Avoidance Required:* If late blooming species with a CNDDB rank of 1 are detected within the Project Disturbance Area the project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The goal of the Plan shall be to retain at least 75 percent of the local population of the affected species. Compensatory mitigation, as described in Section D of this Condition, and at a mitigation ratio of 3:1, shall be required for the 25% or portion that is not avoided. The Plan shall include, at a minimum, the following components and definitions:	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
a. A description of the occurrences of the CNDDB rank 1 species on the project, ecological characteristics such as micro-habitat requirements, ecosystem processes required for maintenance of the habitat, reproduction and dispersal mechanisms, pollinators, local distribution, a description of the extent of the population off-site, the percentage of the local population affected, and a description of how these occurrences would be impacted by the project, including direct and indirect effects. The "local population" shall include the number of individuals occurring within the Palo Verde Watershed boundaries. Occurrences shall be considered impacted if they are within the project footprint, and if they would be affected by project-related hydrologic changes or changes to the local sand transport system. b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the project linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). c. A description of the measures that would be implemented to avoid or minimize impacts to occurrences on the solar facility. Avoidance is generally considered not feasible if the species is located within the Permanent Project Disturbance Area (bounded by the permanent tortoise exclusion fence and the drainage channels). d. If avoidance on the linears, construction laydown areas, and solar facility combined protect less than 75 percent of the local population of the affected species, the project owner shall implement offsite mitigation that demonstrates that the impacts will not cause a loss of viability for that species. Implementation of the compensatory offsite mitigation must meet the performance standards described in section D of this Condition, and may include land acquisition or implementation of a restoration/enhancement program for the species. e. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence. For all but one of the late blooming plant species with potential to occur, the plant species are annuals that depend on a viable seed bank to maintain population health and persistence. The primary goal of avoidance for these annual species will be protection of the soil integrity and the seed bank that is closely associated with undisturbed soils. Any impacts to the soil structure or surface features will be considered an impact, but measures like temporary mowing or brush removal that does not disturb the soil will not be considered impacts to the population. Isolated 'islands' of protected plants disconnected by the project from natural fluvial, aeolian (wind), or other processes essential for maintenance of the species, shall not be considered to be protected and shall not be credited as contributing to the 75 percent avoidance requirement because such isolated populations are not sustainable. 2. *Mitigation for CNDDB Rank 2 Plants (Imperiled) –Avoidance on Linears Required:* If species with a CNDDB rank of 2 are detected within the Project Disturbance Area, the project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan) that describes measures to achieve complete avoidance of occurrences on the project linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). The project owner shall provide compensatory mitigation, at a ratio of 2:1, as described below in Section D for impacts to Rank 2 plants that could not be avoided. The content of the Plan and definitions shall be as described above in subsection C.1.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
3. *Mitigation for CNDDB Rank 3 Plants – No On-Site Avoidance Required Unless Local or Regional Significance:* If species with a CNDDB rank of 3 are detected within the Project Disturbance Area, no onsite avoidance or compensatory mitigation shall be required unless the occurrence has local or regional significance, in which case the plant occurrence shall be treated as a CNDDB rank 2 plant species. A plant occurrence would be considered to have local or regional significance if: 1. It occurs at the outermost periphery of its range in California; 2. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or; 3. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species. 4. *Pre-Construction Notification for State- or Federal-Listed Species, or BLM Sensitive Species.* If a state or federal-listed species or BLM Sensitive species is detected, the project owner shall immediately notify the CDFG, USFWS, BLM, and the CPM. 5. *Preservation of the Germplasm of Affected Special-Status Plants.* For all significant impacts to special-status plants, regardless of whether compensatory mitigation is required, mitigation shall include seed collection from the affected special-status plants on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the project owner. Any efforts to propagate and reintroduce special-status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a Habitat Restoration/Enhancement Plan approved by the CPM. D. **Section D: Off-Site Compensatory Mitigation for Special-Status Plants** Where compensatory mitigation is required under the terms of Section C, above, the project owner shall mitigate project impacts to special-status plant occurrences with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the target species, or restoration/enhancement of populations of the target species, and shall meet the performance standards for mitigation described below. In the event that no opportunities for acquisition or restoration/enhancement exist, the project owner can fund a species distribution study designed to promote the future preservation, protection or recovery of the species. Compensatory mitigation shall be at a ratio of 3:1 for Rank 1 plants, with three acres of habitat acquired or restored/enhanced for every acre of habitat occupied by the special status plant that will be disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is one-fourth acre than the compensatory mitigation will be three-fourths of an acre). The mitigation ratio for Rank 2 plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2 plants. The project owner shall provide funding for the acquisition and/or restoration/enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this Condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
The project owner shall comply with other related requirements in this Condition: **I.** ***Compensatory Mitigation by Acquisition:*** The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands include all of the following: 1. *Selection Criteria for Acquisition Lands.* The compensation lands selected for acquisition may include any of the following three categories: a. Occupied Habitat, No Habitat Threats: The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction). b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Section D.II, below. c. Unoccupied but Adjacent. The project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species. 2. *Review and Approval of Compensation Lands Prior to Acquisition*. The project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the CPM. 3. *Management Plan*. The project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Management Plan shall be submitted for review and approval to the CPM. 4. *Integrating Special-Status Plant Mitigation with Other Mitigation lands.* If all or any portion of the acquired Desert Tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation. 5. *Compensation Lands Acquisition Requirements.* The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
Preliminary Report. The project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board. Title/Conveyance. The project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands. Initial Protection and Habitat Improvement. The project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities shall be estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010,* or more current guidance from the REAT at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, but actual costs will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee. Property Analysis Record. Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands. Long-term Maintenance and Management Funding. In accordance with **BIO-28** (phasing), the project owner shall deposit in NFWF's REAT Account a non-wasting capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision. Interest, Principal, and Pooling of Funds. The project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met: Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this project must be tracked and reported individually to the CPM. Other Expenses. In addition to the costs listed above, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures. Mitigation Security. The project owner shall provide financial assurances in accordance with **BIO-28** (phasing) to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this Condition that are not completed prior to the start of ground-disturbing project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The amount of the Security shall be estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010,* or more current guidance from the REAT agencies, at a ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is significantly impacted by the project. The actual costs to comply	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
with this Condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the project owner has failed to comply with the requirements specified in this Condition. The CPM may use money from the Security solely for implementation of the requirements of this Condition. The CPM's use of the Security to implement measures in this Condition may not fully satisfy the project owner's obligations under this Condition, and the project owner remains responsible for satisfying the obligations under this Condition if the Security is insufficient. The unused Security shall be returned to the project owner in whole or in part upon successful completion of the associated requirements in this Condition. The project owner may elect to comply with the requirements in this Condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this Condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the project owner. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the project. **II.** ***Compensatory Mitigation by Habitat Enhancement/Restoration*:** As an alternative or adjunct to land acquisition for compensatory mitigation the project owner may undertake habitat enhancement or restoration for the target special-status plant species. Habitat enhancement or restoration activities must achieve protection at a 3:1 ratio for Rank 1 plants and 2:1 for Rank 2 plants, with improvements applied to three acres, or two acres, respectively, of habitat for every acre special-status plant habitat directly or indirectly disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is one-fourth acre than the improvements would be applied to an area equal to three-fourths of an acre at a 3:1 ratio, or one-half acre at a 2:1 ratio). Examples of suitable enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species. If the project owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system[8] with one of the following threat ranks: a) long-term decline >30 percent; b) an immediate threat that affects >30 percent of the population, or c) has an overall threat impact that is High to Very High. “Rescue” would be considered successful if it achieves an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”). If the project owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the CPM for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be estimated based on the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010,* or more current guidance from the REAT agencies, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is directly or indirectly impacted by the project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the CPM. The Habitat Enhancement/Restoration Plan shall include each of the following: 1. *Goals and Objectives*. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a target special-status plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”). 2. *Historical Conditions*. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions. 3. *Site Characteristics*. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species.	

[8] Master, L., D. Faber-Langendoen, R. Bittman, G. A., Hammerson, B. Heidel, J. Nichols, L. Ramsay, and A. Tomaino. 2009. *NatureServe Conservation Status Assessments: Factors for Assessing Extinction Risk.* NatureServe, Arlington, VA. Online: http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf, “Threats”. See also: Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1.
NatureServe, Arlington, Virginia. Online: http://www.natureserve.org/publications/pubs/invasiveSpecies.pdf

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
4. *Ecological Factors*. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc. 5. *Methods*. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years. 6. *Budget*. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria. 7. *Monitoring*. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties. 8. *Reporting Program*. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties. 9. *Contingency Plan*. Describe the contingency plan for failure to meet annual goals. 10. *Long-term Protection*. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and target species. **III. *Compensatory Mitigation by Conducting or Contributing to a Special-Status Plant Species Distribution Study*** As a contingency measure in the event that there are no opportunities for acquisition or restoration/enhancement, a Scientific Study of Special-status Plant Species Distribution Study may be funded. Distribution and occurrence health data is very limited for many of the sensitive species that occur on the project or have potential to occur on the project, especially the late summer and fall blooming species. Some of these late blooming species are only known from a few viable occurrences in California, and historic occurrences that have not been re-located or surveyed since they were first documented. The objectives of this study would be to better understand the full distribution of the affected species, the degree and immediacy of threats to occurrences, and ownership and management opportunities, with the primary goal of future preservation, protection, or recovery. This study would include the following: 1. *Historical Occurrence Review*. The Study would include an evaluation of historical localities for the species known to occur on the project or with potential to occur. This would include a review of the CNDDB database, herbarium records from regional herbaria (U.C. Riverside, San Diego Natural History Museum, etc.), other biotechnical reports from the region, and information from regional botanical experts.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
2. *Conduct Site Visits to Historical Localities*. Historical occurrences would be evaluated in the field during the appropriate time of the year for each late blooming species. If located, these occurrences would be evaluated for population size, numbers, plant associates, soils, habitat quality, and potential threats, degree and immediacy of threats, ownership and management opportunities. GPS location data would also be collected during these site visits. 3. *Survey Areas with habitat potential that surround each of these species occurrences to better determine the full range of distribution*. If additional populations are found, collect data (GPS and assessment) on these additional populations consistent with III.2 above. 4. *Prepare a Distribution Study Report*. A report that discusses the finding from the historical information and the range extension surveys would be prepared that summarizes the information for each of the late season surveys. This report will provide valuable information and a better understanding of the actual distribution of these late blooming species within California and will help to determine when and when not there is potential for these species to occur. This valuable information will include a better understand of the ecological factors driving the distribution of these species and will help to better target appropriate habitat for both future surveys as well as potential future mitigation lands. All data from this study will be submitted for incorporation into the CNDDB system and the study report will be made available to resource agencies, conservation groups, and other interested parties. Currently there is no program or study in place that is attempting to address the distributional issues for these late blooming species. If an existing study is identified or if one is developed prior to the study outlined here, an option to fund the existing study may be considered. If an existing study cannot be indentified then one will be developed that follows the guidelines discussed above. The funding provided for the program would be no greater than the cost for acquisition, enhancement, and long-term management of compensatory mitigation lands based on impacts to late blooming sensitive plant species.	
BIO-20: Sand Dune/Fringe-Toed Lizard Mitigation. To mitigate for habitat loss and direct impacts to Mojave fringe-toed lizards the project owner shall provide compensatory mitigation at a 3:1 ratio, which may include compensation lands purchased in fee or in easement in whole or in part, for impacts to stabilized or partially stabilized desert dune habitat (25.3 acres or the acreage of sand dune/partially stabilized sand dune habitat impacted by the final project footprint from the project interconnection to the Colorado River Substation). If compensation lands are acquired, the project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. 1. ***Criteria for Compensation Lands*:** The compensation lands selected for acquisition shall: a. Be sand dune or partially stabilized sand dune habitat within the Palen Valley or Chuckwalla Valley with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat; b. To the extent feasible, be connected to lands currently occupied by Mojave fringe-toed lizard; c. To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;	No later than 30 days prior to beginning site mobilization and construction activities, the project owner shall provide written verification of approved form of Security in accordance with this Condition of Certification. Actual Security shall be provided no later than seven days prior to the beginning of project ground-disturbing activities. The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities. No less than 90 days prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to BLM, the CPM, CDFW and USFWS describing the parcels intended for purchase. The project owner, or an approved third party, shall provide BLM, the CPM, **CDFW** and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with BLM**,** CDFW and the USFWS.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed; e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible; f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat; h. Not be subject to property constraints (i.e. mineral leases, cultural resources); and i. Be on land for which long-term management is feasible. 2. ***Security for Implementation of Mitigation*:** The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this Condition. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM according to the measures outlined in **BIO-12**, and within the time period specified for this assurance (see the verification section at the end of this Condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in **BIO-12**. 3. ***Preparation of Management Plan:*** The project owner shall submit to the CPM, BLM, CDFW and USFWS a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.	Within 90 days after completion of project construction, the project owner shall provide to the CPM an analysis with the final accounting of the amount of sand dune/stabilized sand dune habitat disturbed during project construction. The project owner shall provide written verification to BLM, the CPM, USFWS, and CDFW that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.
BIO-21 (Deleted)	
BIO-22: Mitigation for Impacts to State Waters. The project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607. 1. ***Acquire Off-Site State Waters:*** The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 412 acres of state jurisdictional waters, or the area of state waters directly or indirectly impacted by the final project footprint. The project footprint means all lands disturbed by construction and operation of the Blythe Project, including all linears. The parcel or parcels comprising the 412 acres of ephemeral washes shall include at least 66 acres of desert dry wash woodland or the acreage of desert dry wash woodland impacted by the final project footprint at a 3:1 ratio. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO-12** and the timing associated with **BIO-28** (phasing). Mitigation for impacts to state waters shall be within the Chuckwalla Valley or Colorado River Hydrological Units (HUs), as close to the project site as practicable. 2. ***Security for Implementation of Mitigation:*** The project owner shall provide financial assurances to the CPM and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement	No less than 30 days prior to the start of construction-related ground disturbance activities potentially affecting waters of the state, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented. The project owner shall also provide a discussion of work in waters of the state in Compliance Reports for the duration of the project. No less than 30 days prior to beginning site mobilization and construction activities, the project owner shall provide the form of Security in accordance with this Condition of Certification. No later than seven days prior to beginning project site mobilization and construction activities, the project owner shall provide written verification of the actual Security. The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
of state waters as described in this Condition. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with BLM**,** CDFW and the USFWS, to ensure funding. The final amount due will be determined by and updated appraisal and a PAR analysis conducted pursuant to **BIO-12**. 3. ***Preparation of Management Plan:*** The project owner shall submit to the CPM and CDFW a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control. 4. ***Code of Regulations:*** The project owner shall provide a copy of this Condition (Condition of Certification **BIO-22**) from the Energy Commission Decision to all contractors, subcontractors, and the project owner's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel upon demand. The CPM reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the project owner, the CPM, if the CPM in consultation with CDFW, determines that the project owner has breached any of the terms or Conditions or for other reasons, including but not limited to the following: a. The information provided by the project owner regarding streambed alteration is incomplete or inaccurate; b. New information becomes available that was not known to it in preparing the terms and Conditions; or c. The project or project activities as described in the Staff Assessment have changed. 5. **Best Management Practices:** The project owner shall also comply with the following Conditions to protect drainages near the Project Disturbance Area: a. The project owner shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible. b. The project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows. c. The project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the project owner to ensure compliance. d. Spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages. e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage by the project owner or any party working under contract or with the permission of the project owner, shall be removed immediately.	The project owner, or an approved third party, shall provide BLM, the CPM, CDFW and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW. Within 90 days after completion of project construction, the project owner shall provide to the CPM and CDFW an analysis with the final accounting of the amount of jurisdictional state waters disturbed during project construction. The project owner shall provide written verification to BLM, the CPM, USFWS and CDFW that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from adoption of the Final Energy Commission Decision for the Blythe Solar Power Project). The project owner shall notify the CPM and CDFW, in writing, at least five days prior to initiation of project activities in jurisdictional state waters and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM and CDFW of any change of conditions to the project, impacts to state waters, or the mitigation efforts. The notifying report shall be provided to the CPM and CDFW no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project; the biological and physical characteristics of a project area; or the laws or regulations pertinent to the project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports or until it is deemed unnecessary by the CPM and CDFW.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state. g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage. h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.	
BIO-23: Decommissioning and Reclamation Plan. Upon project closure the project owner shall implement a final Decommissioning and Reclamation Plan. The Decommissioning and Reclamation Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.	No fewer than 30 days prior to the start of site mobilization and construction activities the project owner shall provide to the CPM (for review) and BLM's Authorized Officer (for review and approval) a draft Decommissioning and Reclamation Plan. The plan shall be finalized prior to the start of commercial operation and reviewed every five years thereafter and submitted to the CPM for review and to the BLM's Authorized Officer for approval. Modifications to the approved Decommissioning and Reclamation Plan shall be made only after approval from BLM's Authorized Officer. The project owner shall provide a copy of the approved Decommissioning and Reclamation Plan and any BLM approved revisions to the CPM.
BIO-24: Golden Eagle Inventory and Monitoring. The project owner shall implement the following measures to avoid or minimize project-related construction impacts to golden eagles. 1. ***Annual Inventory.*** For each calendar year during which construction will occur and for up to two years after commercial operation begins an inventory shall be conducted to determine if golden eagle territories occur within one mile of the project boundaries. Survey methods for the inventory shall be as described in the USFWS Land Based Wind Energy Guidelines (2011b) or more current guidance from the USFWS or CPM. 2. ***Inventory Data:*** Data collected during the inventory shall include at least the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; digital photographs; and substrate upon which nest is placed. 3. ***Monitoring and Adaptive Management Plan:*** If an occupied nest[9] is detected within one mile of the project boundaries, the project owner shall prepare and implement a Golden Eagle Monitoring and Management Plan for the duration of construction to ensure that project construction activities do not result in injury or disturbance to golden eagles. The monitoring methods shall be consistent with those described in the USFWS Land Based Wind Energy Guidelines (2011b) or more current guidance from the USFWS or CPM. The Monitoring and Management Plan shall be prepared in consultation with the USFWS. Triggers for adaptive management shall include any	No fewer than 30 days from completion of the golden eagle inventory the project owner shall submit a report to the CPM, CDFw, and USFWS documenting the results of the inventory. If an occupied nest is detected within one mile of the project boundary during the inventory the project owner shall contact staff at the USFWS Carlsbad Office and CDFw within one working day of detection of the nest for interim guidance on monitoring and nest protection. The project owner shall provide the CPM, CDFW, and USFWS with the final version of the Golden Eagle Monitoring and Management Plan within 30 days after detection of the nest. This final Plan shall have been reviewed and approved by the CPM in consultation with USFWS and CDFW.

[9] An occupied nest is one used for breeding by a pair of golden eagles in the current year. Presence of an adult, eggs, or young, freshly molted feathers or plucked down, or current years' mutes (whitewash) also indicate site occupancy. Additionally, all breeding sites within a breeding territory are deemed occupied while raptors are demonstrating pair bonding activities and developing an affinity to a given area. If this culminates in an individual nest being selected for use by a breeding pair, then the other nests in the nesting territory will no longer be considered occupied for the current breeding season. A nest site is considered occupied throughout the periods of initial courtship and pair - bonding, egg laying, incubation, brooding, fledging, and post - fledging dependency of the young.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
evidence of project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the CPM to be the source of golden eagle disturbance.	
BIO-25: Evaporation Pond Netting and Monitoring. The project owner shall cover the evaporation ponds prior to any discharge with mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting mesh sizes approval shall be determined by the CPM in consultation with CDFW and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and the pond shall be designed such that the netting shall never contact the water. Monitoring of the evaporation ponds shall include the following: 1. ***Monthly Monitoring.*** The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. The monthly surveys shall be conducted in one day for a minimum of two hours following sunrise (i.e., dawn), a minimum of one hour mid-day (i.e., 1100 to 1300), and a minimum of two hours preceding sunset (i.e., dusk) in order to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the project site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within one day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within two days of the discovery to the CPM, CDFW, and USFWS. 2. ***Dead or Entangled Birds.*** If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, CDFW, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds. 3. ***Quarterly Monitoring.*** If after 12 consecutive monthly site visits no bird or wildlife deaths or entanglements are detected at the evaporation ponds by or reported to the Designated Biologist, monitoring can be reduced to quarterly visits. 4. ***Biannual Monitoring.*** If after 12 consecutive quarterly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist and with approval from the CPM, USFWS and CDFW, future surveys may be reduced to two surveys per year, during the spring nesting season and during fall migration. If approved by the CPM, USFWS and CDFW, monitoring outside the nesting season may be conducted by the Environmental Compliance Manager. 5. ***Modification of Monitoring Program.*** Without respect to the above requirements the project owner, CDFW or USFWS may submit to the CPM a request for modifications to the evaporation pond monitoring program based on information acquired during monitoring, and may also suggest adaptive management measures to remedy any problems that are detected during monitoring or modifications if bird impacts are not observed. Modifications to the	No less than 30 days prior to operation of the evaporation ponds the project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, CDFW, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any bird or wildlife death or entanglements detected during the site visits or at any other time, and shall describe actions taken to remedy these problems.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
evaporation pond monitoring described above and implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with USFWS and CDFW. In addition, the project owner shall prepare and implement measures that will prevent Couch's spadefoot toads from using the evaporative basins (see Condition of Certification **BIO-26**)	
BIO-26: Couch's Spadefoot Toad Impact Avoidance and Minimization Measures. The project owner shall prepare and implement a Couch's Spadefoot Toad Protection and Mitigation Plan (Protection and Mitigation Plan) to avoid, minimize or mitigate impacts to Couch's spadefoot toads and their breeding habitat during construction and operation of the project. The Protection and Mitigation Plan shall be approved by the CPM in consultation with CDFW, and shall be incorporated into the project's BRMIMP and implemented. It is expected that, as currently proposed, the project would impact three potential breeding ponds. The Protection and Mitigation Plan shall address methods to achieve this avoidance and minimization, and shall include avoidance, minimization, and mitigation measures that would be required if additional habitat or Couch's spadefoot toad are found during habitat surveys. The Protection and Mitigation Plan shall include, at a minimum: *1.* ***Habitat Survey Results:*** a. Survey methodology that focuses on areas that are susceptible to ponding (such as areas that are disturbed and/or artificially compacted); b. Survey results, including a detailed discussion of potential breeding sites, and a description of areas determined not to include breeding habitat; and c. Figures showing the areas surveyed and the location of potential breeding habitat in relation to proposed project features. *2.* ***Impacts Assessment from:*** i. Habitat disturbance from construction; ii. Noise from construction, operations, and potential ORV traffic; iii. Increased access for vehicles from road construction or improvements; iv. Changes in breeding habitat due to changes in flow levels and flow patterns to breeding ponds; v. Increased traffic from construction and operations; vi. Risk of exposure to elevated selenium and salinity levels in evaporative ponds; and vii. Increased risk of predation. *3.* ***Avoidance and Minimization Measures:*** a. Description of measures that would be implemented to avoid impacts to potential breeding ponds, such as design strategies; protective fencing or other barriers, worker's education, minimizing construction traffic within the vicinity of breeding ponds, and biological monitoring;	No less than 30 days prior to any project-related ground disturbance, the project owner shall submit to the CPM and CDFW, a final Protection and Mitigation Plan. The Protection and Mitigation Plan shall address on-site protection and mitigation measures to be implemented during construction. Modifications to the Protection and Mitigation Plan shall be made only after approval from the CPM, in consultation with CDFW. If the Protection and Mitigation Plan includes creation of ponds, the number and acreage of created ponds shall be described in the plan. No less than 90 days prior to operation of project the project owner shall provide to the CPM as-built drawings and photographs of the created ponds and maps showing the size and location of the ponds in relation to project features. On January 31st of every year following initiation of operation of the project, the project owner shall submit reports to the CPM documenting the capacity of the created ponds to hold water for at least nine days during the spadefoot toad breeding season. If ponds fail to hold water as described above the project owner shall implement remedial actions. The annual reporting may be terminated upon satisfactory demonstration of this performance standard, and with approval of the CPM. If mitigation land is purchased as an alternative to pond creation, the project owner shall provide the CPM and CDFW with an approved form of Security and the calculation of such security in accordance with this Condition of Certification and **BIO-12** no later than 30 days prior to beginning project ground-disturbing activities. Actual Security shall be provided no later than seven days prior to the beginning of project ground-disturbing activities. If Security is provided, the project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities. No less than 90 days prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFW and USFWS describing the parcels intended for purchase. The project owner, or an approved third party, shall provide the CPM, CDFW and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFW.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
b. Designation of a Management Area around breeding ponds that includes an appropriate upland buffer, and a description of measures used to minimize impacts within this buffer; and c. Design and operation measures that will bar individuals from entering evaporative ponds. 4. ***Mitigation:*** If complete avoidance of the ponds or other breeding sites identified during surveys is not possible, the Protection and Mitigation Plan shall include plans to create additional breeding habitats (ephemeral pond) at least equal in area to the acreage of ponds being impacted. Alternatively, the project owner may purchase mitigation land that has the potential for ponding that is equal to or greater than the ponds identified as potential Toad breeding ponds within the Project Disturbance Area. If ponds are to be created, the created ponds shall be capable of holding water for at least nine days during the spadefoot toad breeding season. The created ponds shall be monitored and managed to ensure fulfillment of this performance standard by site visits at the pond following summer rainfall events. If the created ponds fail to achieve this standard, remedial action shall be implemented (for example, by compacting the soil in the pond to increase water-holding capacity). If compensation lands are acquired, the project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. a. *Criteria for Mitigation Lands*: If the project owner chooses to mitigate in whole or in part by purchasing habitat: i. The project owner shall purchase habitats in fee title or easement within the known range of the Couch's spadefoot toad. The habitat shall have similar characteristics to those impacted on site including 1. artificial or natural depressions should be deep enough to have the potential to support the Couch's spade foot toad 2. depressions should have potential to pond water for nine days 3. adjacent uplands should have potential to provide refugia and foraging habitat 4. other characteristics that a trained biologist would employ in designating potential habitat for the species ii. If the above criteria are met, these habitats may overlap on other lands preserved by the project owner for other mitigation (e.g., desert tortoise habitat within Northern and Eastern Colorado Desert Coordinated Management) and shall: 1. Provide quality habitat for Couch's spadefoot toad, that has the capacity to regenerate naturally when disturbances are removed; 2. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible; 3. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; 4. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;	The project owner shall provide written verification to the CPM, and CDFW that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
5. Not be subject to property constraints (i.e. mineral leases, cultural resources); and 6. Be on land for which long-term management is feasible. b. *Security for Implementation of Mitigation*: The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Couch's spadefoot toad habitat as described in this Condition. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM and according to the measures outlined in **BIO-12**, and within the time period specified for this assurance (see the verification section at the end of this Condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in **BIO-12**.	
BIO-27: In-Lieu Fee Mitigation Option. The project owner may choose to satisfy its mitigation obligations by paying an in lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099. Alternately, the CPM, in conjunction with the BLM, CDFW, and USFWS, may approve the project owner's use of another mitigation program or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision or mitigation program is found by the Commission CPM to mitigate the impacts identified herein. If the in-lieu fee proposal or mitigation program is found by the Commission CPM, in coordination with the BLM, CDFW, and USFWS to be in compliance, and the project owner chooses to satisfy its mitigation obligations through the in-lieu fee, the project owner shall provide proof of the in-lieu fee payment to the CPM prior to site mobilization and construction.	If electing to use this provision, the project owner shall notify the Commission that it would like a determination that the project's in-lieu fee proposal or mitigation program mitigate for the impacts identified herein. Prior to site mobilization and construction related ground disturbance the Project Owner shall provide proof of the in lieu fee payment to the CPM.
BIO-28: Project Construction Phasing Plan. The project owner shall provide compensatory mitigation for the total Project Disturbance Area and may provide such mitigation in four phases as depicted in Figure 2-3 (Project Phasing) in Revised Petition for Amendment dated April 2013, "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the project including all linear and ancillary facilities, as well as undeveloped areas inside the Project's boundaries that would no longer provide viable long-term habitat. Project construction will occur in phases that generally follow development of the solar units, 1. Phase 1: Includes Unit 1 and the linear corridor from where the gen-tie leaves Unit 1 south to the Colorado River Substation, and the distribution line 2. Phase 2: Includes Unit 2 3. Phase 3: Includes Unit 3 4. Phase 4: Includes Unit 4 and the linear corridor from where the gen-tie leaves Unit 1 to the northern boundary of solar plant site. This portion of the linear corridor would not need to be constructed/disturbed until Unit 4 is constructed. These phases will generally include installation of fencing, clearing, grubbing and grading, and development of common facilities first, followed by the remaining power block units. All construction activities for the non-linear features during these subsequent phases will occur within desert tortoise exclusionary fenced areas that have been cleared in accordance with USFWS protocols. The estimated disturbance area for each project Phase and resource type is provided in **BIO-28 Table 1** below. This table shall be refined prior to the start of each construction phase with the disturbance area adjusted to reflect the final project footprint for each phase. Prior to initiating each phase of construction the project owner shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed.	The project owner shall not disturb any area outside of the area that has been approved for that phase of construction and for the previously approved phases of construction. No less than 30 days prior to the start of desert tortoise clearance surveys for each phase, the project owner shall submit a description of the proposed construction activities for that phase to CDFW, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction and amount of acres of each habitat type to be disturbed. No less than 30 days prior to beginning Project ground-disturbing activities for each phase, the project owner shall provide the form of Security in accordance with this Condition of Certification in the amounts described in BIO-28 Table 1. No later than 7 days prior to beginning Project ground-disturbing activities for each phase, the project owner shall provide written verification of the actual Security. The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities for each phase.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Biological Resources (cont.)	
Mitigation acres are calculated based on the compensation requirements for each resource type as described in the above Conditions of Certification – **BIO-12** (Desert Tortoise), **BIO-20** (Mojave Fringe-toed Lizard), **BIO-18** (Western Burrowing Owl), and **BIO-22** (State Waters). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.	

BIO-28 Table 1. Impacts and Mitigation Required For Each Phase of The Project

	Desert Tortoise		MFTL		WBO	
Phase	**Impact (acres)**	**Mitigation (acres)**	**Impact (acres)**	**Mitigation (acres)**	**Impact (individuals/ pairs)**	**Mitigation (acres)**
Phase 1	1,074	1,074	25	76	2	39
Phase 2	942	942	0	0	0	0
Phase 3	1,051	1,051	0	0	0	0
Phase 4	908	908	0	0	0	0
Total	3,975	3,975	25	76	2	39

	Desert Dry Wash Woodland		Vegetated Ephemeral Swales and Unvegetated Ephemeral Dry Wash	
Phase	**Impact (acres)**	**Mitigation (acres)**	**Impact (acres)**	**Mitigation (acres)**
Phase 1	2	6	91	137
Phase 2	5	15	59	86
Phase 3	0	0	5	8
Phase 4	15	45	77	115
Total	22	66	232	346

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources	
CUL-1: Prehistoric Trails Network Cultural Landscape (PTNCL) Documentation and Possible NRHP Nomination. The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the PTNCL Documentation and Possible NRHP Nomination program presented in the Blythe Solar Power Plant (BSPP) Revised Staff Assessment RSA). The amount of the contribution shall be $35 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20 percent of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute one-third of the total original contribution amount. If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the PTNCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the PTNCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the PTNCL documentation and possible NRHP nomination program, and then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.	No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special PTNCL fund, the project owner shall submit a copy of the notice to the Energy Commission's Compliance Project Manager (CPM).
CUL-2: Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) Documentation and Possible NRHP Nomination. The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the Documentation and Possible NRHP Nomination program presented in the BSPP RSA. The amount of the contribution shall be $25 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20 percent of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute one-third of the total original contribution amount. If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the DTCCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the DTCCL documentation and possible NRHP nomination program, and then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.	No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special DTCCL fund, the project owner shall submit a copy of the notice to the CPM.
CUL-3: Cultural Resources Personnel. Prior to the start of ground disturbance (includes "preconstruction site mobilization", "ground disturbance," and "construction grading, boring, and trenching," as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS), one or more alternate CRSs, if alternates are needed, and the two technical specialists identified below in this Condition. The CRS shall manage all cultural resources mitigation, monitoring, curation, and reporting activities in accordance with the Conditions of Certification (Conditions). The CRS shall have a primarily administrative and coordinative role for the BSPP. The project owner shall ensure that the CRS implements the cultural resources conditions, providing for data recovery from known historical resources, and shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be impacted in an unanticipated manner. The CRS may obtain the services of field crew members and cultural resources monitors (CRMs), if needed, to assist in mitigation, monitoring, and curation activities. No ground disturbance shall occur prior to CPM approval of the CRS and alternates, unless such activities are	Preferably at least 120 days, but in any event no less than 75 days prior to the start of ground disturbance, the project owner shall submit the resumes for the CRS, the alternate CRS(s) if desired, the PPA, and the PHA to the CPM for review and approval. At least 65 days prior to the start of data recovery on known archaeological sites, the project owner shall confirm in writing to the CPM that the approved CRS, the PPA, and the PHA will be available for on-site work and are prepared to implement the cultural resources Conditions **CUL-6** through **CUL-11**. Rationale: Proposed schedule change is in accordance with the project time-line.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including but not limited to noncompliance on this or other Energy Commission projects. ***Cultural resources specialist.*** The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications: 1. A background in anthropology and prehistoric archaeology; 2. At least 10 years of archaeological resource mitigation and field experience, with at least three of those years in California; and 3. At least three years of experience in a decision-making capacity on cultural resources projects, with at least one of those years in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources. ***Required Cultural Resources Technical Specialists.*** The project owner shall ensure that the CRS obtains the services of a qualified prehistoric archaeologist to conduct the research specified in CUL-6 and CUL-7. The Project Prehistoric Archaeologist's (PPA) training and background must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and the resume of the PPA must demonstrate familiarity with similar artifacts and environmental modifications (deliberate and incidental) to those associated with the prehistoric and protohistoric use of the Palo Verde Mesa. The PPA must meet OSHA standards as a "Competent Person" in trench safety. The project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the research specified in CUL-8 through CUL-11. The Project Historical Archaeologist's (PHA) training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for historical archaeology, as published in Title 36, Code of Federal Regulations, part 61. The resumes of the CRS, alternate CRS, the PPA, and the PHA shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. The project owner may name and hire the CRS, alternate CRS, the PPA, and the PHA prior to certification. **Optional specialist backhoe operator.** The project owner shall ensure that the CRS obtains the services of a specialist backhoe operator to conduct the activities specified in CUL-6, if needed. This backhoe operator shall have a resume that demonstrates previous experience using a backhoe in coordination with an archaeologist. In addition, the operator shall use a machine with a "stripping bucket" that is sensitive enough to remove even and consistent layers of sediment 5 centimeters thick. ***Field crew members and cultural resources monitors.*** CRMs and field crew members shall have the following qualifications: 1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or 2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or	At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If no alternate CRS is available to assume the duties of the CRS, a monitor may serve in place of a CRS so that ground disturbance may continue up to a maximum of three days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance. At least 20 days prior to data recovery on known archaeological sites, the CRS shall provide a letter naming anticipated field crew members for the project and attesting that the identified field crew members meet the minimum qualifications required by this Condition. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition. At least five days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide letters to the CPM identifying the new CRMs and attesting to their qualifications.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.	
CUL-4: Project Documents for Cultural Resources Personnel. Prior to the start of ground disturbance, the project owner shall provide the CRS, the PPA, and the PHA with copies of the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and the RSA Supplement/Errata, if any, and the 2013 Project Amendment SA for the project. The project owner shall also provide the CRS, the PPA, the PHA, and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all lay down areas. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. Staff shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM. Release of cultural resources information will be pending BLM approval. If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, the PPA, the PHA, and the CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM. Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week. The project owner shall notify the CRS and the CPM of any changes to the scheduling of the construction phases.	Preferably at least 115 days, but in any event no less than 60 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), and RSA Supplement/Errata to the CRS, if needed, and to the PPA, and the PHA. The project owner shall also provide the subject maps and drawings to the CRS, PPA, PHA, and CPM. Staff, in consultation with the CRS, PPA, and PHA, will review and approve maps and drawings suitable for cultural resources monitoring and data recovery activities. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS, PPA, PHA, and CPM. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS, PPA, PHA, and CPM. Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax. Within five days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.
CUL-5: Cultural Resources Monitoring and Mitigation Plan. Prior to the start of ground disturbance, the project owner shall submit to the CPM for review and approval the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PPA, and the PHA. <u>The CPM shall facilitate review and comment by affected Indian tribes prior to approval.</u> The authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, the PPA, and the PHA, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM. Prior to certification, the project owner may have the CRS, alternate CRS, the PPA, and the PHA complete and submit to CEC for review the CRMMP, except for the portions to be contributed by the PTNCL and the DTCCL programs. The CRMMP shall include, but not be limited to, the elements and measures listed below. 1. The following statement shall be included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The Conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A."	1. Preferably, at least 90 days but in any event no less than 30 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval. The CPM shall facilitate review and comment of the CRMMP with affected Native American tribes. 2. At least 20 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, data recovery). 3. At least 30 days prior to the initiation of ground disturbance, the project owner shall provide to the CPM a copy of a letter from a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, stating the facility's willingness and ability to receive the materials generated by BSPP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
2. The duties of the CRS shall be fully discussed, including coordination duties with respect to the completion of the Prehistoric Trails Network Cultural Landscape (PTNCL) documentation and possible NRHP nomination program and the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) documentation and possible NRHP nomination program, and oversight/management duties with respect to site evaluation, data collection, monitoring, and reporting at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. 3. A general research design shall be developed that: a. Charts a timeline of all research activities, including those coordinated under the PTNCL and DTCCL documentation and possible NRHP nomination programs; b. Recapitulates the existing paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts developed in the PTNCL and DTCCL historic context and adds to these the additional context of the non-military, historic-period occupation and use of the Palo Verde Mesa, to create a comprehensive historic context for the BSPP vicinity; c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological resource types known for the Palo Verde Mesa, based on the research questions developed under the PTNCL and DTCCL research and on the archaeological and historical literature pertinent to the Palo Verde Mesa; and d. Clearly articulates why it is in the public interest to address the research questions that it poses. 4. Protocols, reflecting the guidance provided in CUL-6 through CUL-11 shall be specified for the data recovery from known prehistoric and historic-period archaeological resource types. 5. Artifact collection, retention/disposal, in-situ or onsite reburial (to the extent authorized by BLM), and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural resources materials and documentation resulting from evaluation and data recovery at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan may be included in the CRMMP for limited data types. 6. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground–disturbance analysis phases of the project shall be specified. 7. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified. 8. The manner in which Native American observers or monitors will be included, in addition to their roles in the activities required under CUL-1, the procedures to be used to select them, and their roles and responsibilities shall be described. 9. Notification of Native American Tribes After a Discovery. The CRMMP shall identify which Native American Tribes will be notified of events triggering notification requirements; and will include manner, type and timing of the notification. 10. The CRMMP will also describe the steps and timing for addressing an unanticipated discovery.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
11. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts. 12. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository or museum shall be stated. 13. The commitment of the project owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. The project owner shall identify a curation facility that could accept cultural resources materials resulting from BSPP cultural resources investigations. 14. The CRS shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from known CRHR-eligible archaeological sites and from CRHR-eligible sites that are encountered during ground disturbance. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.	
CUL-6: Prehistoric Quarries Archaeological District (PQAD) Data Recovery and District Nomination. Prior to the start of ground disturbance, the project owner shall ensure that the CRMMP includes a PQAD evaluation and data recovery plan, to identify buried additional potential contributors to the district by geophysical or mechanical survey, to investigate and establish the relationships among all potential contributors by formulating research questions answerable with data from the contributors, conduct data recovery from a sample of the contributors, and write a report of investigations and possibly CRHR and NRHP nominations as well. The potential contributors include quarry sites CA-RIV-3419 and thermal cobble feature SMB-P-434. This site list may be revised only with the agreement of the CRS and the CPM. The CRMMP shall also include a detailed data recovery plan for an isolated potential thermal cobble features (not included in the PQAD) at multi-component site SMB-M-418. The project owner shall ensure that the CRS and the PPA assess the NRHP and CRHR eligibility of the PQAD district. Additionally, if the PQAD is found to be ineligible for both registers, the thermal cobble features' eligibility as a separate archaeological district consisting of a thermal cobble feature cluster must also be considered. The evaluation and data recovery plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. The project owner shall then ensure that the CRS, the PPA, the specialist backhoe operator, and archaeological team members implement the plan, with the permission of the BLM. The PQAD evaluation and data recovery plan shall provide, at a minimum, the details of each of the numbered elements below. 1. ***Research Design*** Based on the prehistoric and ethnohistoric contexts developed for the PTNCL under the research program funded through CUL-1, Tasks C and D, and the archaeological and ethnohistoric literature pertinent to the Palo Verde Mesa, the research design shall reflect archaeological themes that relate to the identity and the lifeways of Native American groups on the Palo Verde Mesa in the prehistoric and historic periods. The research design shall:	1. At least 15 days prior to the start of BSPP construction-related ground disturbance in the linear facilities corridor impacting site CA-RIV-3419, the project owner shall notify the CPM that the field recordation of the impacted southwestern portion of the site has ensued. 2. At least 90 days prior to the onset of BSPP construction-related ground disturbance in Unit 1 east of Historic Road SMB-H-601, the project owner shall ensure that the PPA completes the geophysical test and that the CRS and PPA consult with the CPM, via telephone, to arrive at an agreement on the reliability of the use of magnetometry to locate buried PQAD thermal cobble features and how to proceed with the subsurface survey. The approved survey shall be conducted. The project owner shall also submit, for the review and approval of the CPM, the precise geographic coordinates of the provisional boundary of the PQAD and a stratified random sample for a broader magnetometry survey of 10 percent of the PQAD within the project boundaries (maximum two acres) or a stratified random sample for a mechanical subsurface survey of 2.5 percent of the PQAD located inside the project's boundaries. 3. At least 60 days prior to the onset of BSPP construction-related ground disturbance in Unit 3 east of Historic Road SMB-H-601, the project owner shall ensure that the PPA completes the preliminary report on the formal inventory of the PQAD prepared by or under the direction of the CRS. The project owner shall ensure that the preliminary report is a concise document that provides descriptions of the schedule and methods of the

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
a. Verify from the geological literature the Pleistocene age of the pebble terraces; b. Formulate archaeological research questions and testable hypotheses specifically applicable to the individual contributors (for example, hypotheses regarding the function of the thermal cobble features— cooking? lithic heat treatment? or both?) and to the PQAD overall; c. Define data sets needed to answer the formulated research questions; and d. Develop explicit CRHR-eligibility and NRHP-eligibility assessment criteria, correlated with the research questions and specifically referencing the data sets required to answer them, for the PQAD and for the thermal cobble features as a separate potential archaeological district. 2. ***Program for Evaluation, Data Recovery, and Possible Nomination*** The data recovery program shall: a. Explain how the data sets that are anticipated for the PQAD will contribute to knowledge of the prehistoric and historic-period Native American themes of the research design and answer particular research questions; b. Set out the purposes and methods of the several field phases of the PQAD evaluation and data recovery program (Geophysical Test, Geophysical Survey/Mechanical Survey, Evaluation and Data Recovery); c. Set out the purposes and methods of the concomitant material analyses; and d. Describe the required reports of investigations, the resource registrations (if appropriate), and the process of producing them. 3. ***PQAD Arbitrary Provisional Boundary Definition*** The CRS, PPA, and CPM shall derive and agree upon, in consultation, the precise location of an arbitrary provisional PQAD boundary on the surface of the plant site and in the vicinity of the linear facilities corridor. 4. ***Evaluation and Data Recovery Methodology*** a. *Quarries*: The protocol for the quarry sites simultaneously recovers data from the parts of the quarry site, CA-RIV-3419 the project would impact and allows an assessment of the significance of the impacts of the project to the quarry site and an assessment of the validity of the PQAD concept. i. Conduct a 100 percent pedestrian survey of the parts of the quarry sites that the project activities would disturb; ii. Map and field-record finished tools, diagnostic artifacts, ceramics, artifact concentrations and features (and the material types of each) within the impacted portions of the quarry sites. Identify and quantify artifacts within a sample of no more than 1 percent of the impacted portions of the quarry sites using 2 by 2 meter surface units. Record any differential distribution of artifacts (with suggested explanations for the distribution), and assess the integrity of the site, providing evidence on which that opinion is based; iii Collect for dating and source analyses any obsidian artifacts;	inventory field effort, a preliminary tally of the numbers and, where feasible, the types of archaeological deposits that were found, a discussion of the potential range of error in that tally, and a map of the locations of the found archaeological deposits that has topographic contours and the project site landform designations as overlays. The results of the formal inventory, as set out in the preliminary report, shall be the basis for the refinement of the provisional district boundary. 4. At least 30 days prior to the start of BSPP construction-related ground disturbance in Unit 3 east of Historic Road SMB-H-601, the project owner shall notify the CPM that the CRS has initiated the data recovery phases of the data recovery program. 5. At least 30 days prior to the start of ground disturbance within 30 meters of the site boundaries of the three isolated thermal cobble features, the project owner shall notify the CPM that the CRS has initiated data recovery on the three isolated thermal cobble features. 6. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the preparation of the National Register of Historic Places and the California Register of Historical Resources nominations for the PQAD and submits the nominations to the State Historic Resources Commission for formal consideration. 7. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the professional paper and provides the CPM with three copies of the final product of that effort, and prepares, and submits for the approval of the CPM, a public outreach product. Upon the CPM's approval of the latter product, the project owner shall ensure, as appropriate, the product's installation, implementation, or display. 8. No longer than 90 days after the end of all construction-related ground disturbance, the project owner shall ensure that the CRS completes the requisite material analyses and prepares and submits, for the approval of the CPM, the final cultural resources report for the Blythe cultural resources data recovery and monitoring activities. The final report shall provide descriptions of the schedule and methods of the data recovery effort, technical descriptions of excavated archaeological features and buried land surfaces that present the highest resolution of technical data that can be derived from the data recovery field notes, plan and, as appropriate, profile drawings and photographs of excavated archaeological features and buried land surfaces, and technical descriptions and appropriate graphics of the stratigraphic contexts of excavated archaeological features and buried land surfaces.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
iv. With the approval of BLM, conduct a survey of a one percent sample of randomly selected 10 x 10- meter units on the unimpacted portions of the quarry sites; v. Gather the same data in the same way as for the impacted parts of the quarry sites; vi. Compare these data to those gathered in the project-impacted parts of the sites vii. With approval of BLM, conduct a sample survey of a zone 150 meters wide totaling one-half the length of the northwest boundary of CA-RIV-3419. viii. Draw conclusions from the collected data on whether the parts of the quarry sites that would be destroyed by the project contribute significantly to the CRHR- and NRHP eligibility of the sites; ix. Draw conclusions from the collected data, if possible, on whether the merging of the quarries and the lithic scatter in a district is valid. x. Draw conclusions from the collected data, if possible, on whether the merging of the quarries and the thermal cobble features in a district is valid. b. *Thermal Cobble Features* The protocol for the thermal cobble features shall include Phase I identification of possible additional subsurface contributors and compressed Phase II-Phase III evaluation and data recovery from a sample of intact sites or from all of the surface sites, whether intact or not. Phase I is geophysical and/or mechanical testing to determine the horizontal and vertical extent of the distribution of the thermal cobble features, to identify any buried intact examples of thermal cobble features out 100 meters, within the area subject to project impacts, from all surface examples, and to determine if morphological differences are present among the thermal cobble features. Phase II-Phase III (evaluation and data recovery) would reflect judgment that features only present on the surface would be register ineligible and the existing recordation, updated to reflect the test excavation, and would be adequate data recovery. Features with subsurface deposits would be register eligible, and data recovery would ensue. Geophysical Test for Subsurface PQAD Contributing Thermal Cobble Features: i. Test, in a one-acre parcel within 30 meters of known thermal cobble features, the efficacy of the use of magnetometry to locate buried examples of thermal cobble features; ii. Ground-truth by hand or mechanical excavation a minimum 25 percent sample (but no more than five individual anomalies) of the anomalies identified in the test survey; iii. Keep field notes and the forms for the survey areas sufficient to completely document the geophysical test; iv. Inform the CPM of the results of the magnetometry survey and groundtruthing and consult on the efficacy of continuing this survey method; Geophysical Survey for Subsurface PQAD Contributing Thermal Cobble Features: If the CRS and CPM agree, after consultation, that the geophysical test demonstrates that the use of magnetometry appears to be	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
reasonably effective in locating buried thermal cobble features, the project owner shall ensure that the PPA proceeds to a broader magnetometry survey of a sample of the area within the PQAD provisional district boundary. The PPA shall: i. Develop a single stratified random sample for the PQAD that would result in a magnetometry survey of a minimum of 10 percent (a maximum of two acres) of the total district area on the plant site; ii. Use criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical material character and in the chronology of the PQAD, as such variability is presently known from the field investigations; iii. Ground-truth by hand or mechanical excavation the lesser of 10 percent or 10 individual anomalies of those identified in the test survey; iv. Inform the CPM of the results of the survey; v. Keep field notes and the forms for the survey are sufficient to completely document the geophysical survey; Mechanical Survey for Subsurface PQAD Contributing Thermal Cobble Features: If the CRS and CPM agree, after consultation, that the geophysical test demonstrates that the use of magnetometry appears to be ineffective in locating buried thermal cobble features, the project owner shall ensure that the PPA submits, for CPM review and approval, the CRS's and PPA's plan and methods for a mechanical subsurface survey of the PQAD, using construction equipment, such as a road grader or a backhoe that can work in 5-centimeter lifts. The plan and methods shall include: i. Use of transects, the proposed width and length of which the CPM would approve ii. Removal of thin (no thicker than approximately 5 centimeters) layers to carefully expose target archaeological deposits iii. Survey of a minimum of 2.5 percent of the total PQAD area on the plant site; iv. Use criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical and material character and in the chronology of the PQAD, as such variability is presently known from the field investigations; v. Preservation of found archaeological deposits until the conclusion of the survey to facilitate the formulation of a representative data recovery sample; vi. Consideration of the PPA recovering a sample of the buried land surfaces that may surround individual features or groups of features and documenting the material culture assemblages that may be found on such surfaces; vii. Verbal report to the CPM on the results of the survey; viii. Retention of field notes and the forms for the survey areas sufficient to completely document the mechanical survey.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
Data Recovery from Thermal Cobble Features: Data shall be recovered from impacted thermal cobble features. The purpose of this documentation would be to describe the physical variability of the features, to identify and inventory the artifacts and ecofacts that are found in them, and to interpret the methods of construction and the potential uses of the features. The procedures below shall be used for data recovery at SMB-P-434 and the potential thermal cobble features at multi-component site SMB-M-418. Data recovery activities shall include: i. Excavation would entail small (approximately 1–3 meters square) areal exposures by hand, where feasible, to remove the archaeological deposits in anthropogenic layers, if present; ii. Retention of samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses; iii. Screening of the balance of each layer through hardware cloth of no greater than 1/8-inch mesh; iv. Recordation of these small exposures in drawings and photographs; v. Retention of field notes and the forms for the excavated features sufficient to acquire the complete complement of data necessary for the description of each feature and the interpretation of the construction and use of each feature to the satisfaction of the CPM; vi. Completions by PPA or CRS and submission by project owner to CPM and BLM of draft DPR 523C site forms for sites where data recovery completed. Data Recovery from Former Land Surfaces Surrounding Thermal Cobble Features: Data shall be recovered from a sample of buried land surfaces assumed to be adjacent to buried thermal cobble features, if any, identified during the geophysical or mechanical subsurface survey, to document the material culture assemblages and other evidence of behavior that may be found on such surfaces. The project owner shall ensure that the PPA: i. Develops, in consultation with the CRS and the CPM a sample of the potential buried surfaces, if any, that would be subject to excavation; ii. Uses criteria to derive the sample that the CRS, the PPA, and the CPM shall agree upon and that reflect the spatial variability in the physical and material character and in the chronology of the PQAD, as such variability is presently known from the field investigations; iii. Excavates by hand three large (three meters square) block exposures, iv. Successfully recovers data from at least four block exposures, but must make no more than eight attempts to find buried surfaces around thermal cobble features. v. Removes the archaeological deposits from the top of the surface in anthropogenic layers, if present. Excavates each block exposure as a single excavation unit rather than as nine separate, one-meter-square excavation units; the PPA may excavate three continuous, 1-metersquare excavation units together across the center of the feature to assess the presence of a surface and then excavate the other six units if a surface is present;	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
vi. Retains samples of each layer sufficient to submit for radiocarbon assays, and macrobotanical, palynological, geochemical, or other analyses; vii. Screens the balance of each layer through hardware cloth of no greater than 1/8-inch mesh; viii. Keeps field notes and the forms for the excavated features sufficient to acquire the complete complement of data necessary for the description of the distributions of artifacts and ecofacts across each surface, and the interpretation of the use of each surface, to the satisfaction of the CPM; 5. ***Materials Analyses*** The project owner shall ensure that the PQAD evaluation and data recovery plan articulates the anticipated scope of the analyses of the artifact and ecofact collections that cumulatively result from the investigations of the PQAD, articulates the analytic methods to be used, and articulates how the data sets that such analyses will produce are relevant to the themes and questions in the research design for the PQAD. 6. ***Report of Investigations*** The project owner shall ensure that the PQAD evaluation and data recovery plan states that a final report for the PQAD evaluation and data recovery plan Data Recovery Program is required and describes the content, production schedule, and approval process for the report. 7. ***Provision of Results to the PTNCL PI*** The project owner shall ensure that the CRS provides the data and results of the PQAD evaluation and data recovery plan Data Recovery Program to the PTNCL PI for incorporation into the PTNCL NRHP nomination. 8. ***California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP) Registrations if appropriate*** The project owner shall ensure that the PPA prepares a CRHR nomination and a NRHP nomination for the PQAD, including both the contributors located within the boundaries of the BSPP and such contributors, entire and partial, located beyond the boundaries of the BSPP, as are known or posited. The nominations should be the PPA's best estimate of a boundary for the district, a boundary that the PPA shall derive on the basis of the results of the PQAD evaluation and data recovery program and present in the final report for that program. The project owner shall ensure that the CRS: a. submits the CRHR nomination to the State Historical Resources Commission for formal consideration of CRHR eligibility, b. submits the NRHP nomination to the State Historical Resources Commission to initiate the process of formal consideration by the Keeper of the National Register, and c. tracks and facilitates the review of both nominations to acceptance or rejection.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
9. ***Outreach Initiatives If PQAD is not Eligible*** a. Professional Outreach. The project owner shall ensure that the CRS and/or PPA prepare a research paper and present it at a professional conference, to inform the professional archaeological community about the PQAD and to interpret its implications for our understanding of the prehistory and early history of Native American life in the region. b. Public Outreach. The project owner shall prepare and present materials that Interpret the PQAD for the public. Project owner shall propose at least one outreach project, examples may include one-time preparation of an instructional module or one-time preparation of a public interpretation brochure.	
CUL-7: Data Recovery For Small Prehistoric Sites (Lithic Scatters, Cairns, and Pot Drops). The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "small prehistoric sites," consisting of sites SMB-H-CT-001, and SMB-H-WG-102. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include use of the CARIDAP protocol on qualifying sites, how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location, recordation equipment and methods used and describe any post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which, for sites where CARIDAP does not apply, shall include, but is not limited to the following tasks: 1. Use location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) to add to the original site maps the following features: seasonal drainages, site boundaries, location of each individual artifact, and the boundaries around individual artifact concentrations; 2. Request the PTNCL geoarchaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the PTNCL geoarchaeologist not be available, to identify the specific landform for each site; 3. Map and field-record all lithic artifacts (numbers of flakes, the reduction sequence stage each represents, cores, tool blanks, finished tools, hammerstones, and concentrations, and the material types of each) and the other types of prehistoric artifacts present 4. Map any differential distribution of artifacts and suggest explanations for the distribution 5. Assess the integrity of the site and provide the evidence substantiating that assessment; 6. Collect for dating and source analyses any obsidian artifacts; 7. Field record the surface location of all other artifacts and collect all ceramic artifacts and botanical and faunal remains for laboratory analysis and curation; 8. Surface scrape to a depth of 5 centimeters a 5-meter-by-5-meter area centered on the artifact concentration, field-record the lithic artifacts as to location, material type, and the reduction sequence stage each represents, record the location of all other artifacts, and retain the obsidian and ceramic artifacts and botanical and faunal remains for laboratory analysis and curation;	At least 15 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for small sites has ensued. After the completion of the excavation of the first 1-meter-by-1-meter excavation unit at each of the subject sites, the CRS shall notify the CPM regarding the presence or absence of subsurface deposits and shall make a recommendation on the site's CRHR eligibility. Within one week of the completion of data recovery at a site, the project owner shall submit a letter report written by the PPA or CRS for review and approval of the CPM. When the CPM approves the letter report, ground disturbance may begin at this site location.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
9. Excavate one 1-meter-by-1-meter unit in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, placing the unit in the part of the site with the highest artifact density and recording its locations on the site map; 10. Place one 1-meter-by-1-meter excavation unit, as described above, in the center of each concentration if multiple artifact concentrations have been identified; 11. Notify the CPM by telephone or e-mail that subsurface deposits were or were not encountered and make a recommendation on the site's CRHR eligibility; 12. If no subsurface deposits were encountered, and the CPM agrees the site is not eligible for the CRHR, data recovery is complete; 13. If subsurface deposits are encountered, test the horizontal limits of the site by excavating additional 1-meter-by-1-meter excavation units in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, using a shovel or hand auger, or other similar technique, at four spots equally spread around the exterior edge of each site, recording the locations of these units on the site map; 14. Sample the encountered features or deposits, using the methods described in the CRMMP, record their locations on the site map, retain samples, such as flotation, pollen, and charcoal, for analysis, and retain all artifacts for professionally appropriate laboratory analyses and curation, until data recovery is complete; 15. Present the results of the CUL-7 data recovery in a letter report by the PPA or CRS, which shall serve as a preliminary report. Letter reports may address one site, or multiple sites depending on the needs of the CRS. The letter report shall be a concise document the provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, a map showing the location of excavation units including topographic contours and the site landforms, and a discussion of the CRHR eligibility of each site and the justification for that determination; 16. Update the existing Department of Parks and Recreation (DPR) 523 site form for these sites, including new data on seasonal drainages, site boundaries, location of each individual artifact, the boundaries around individual artifact concentrations, the landform, and the eligibility determination; and 17. Present the final results of data recovery at these prehistoric sites in the CRR, as described in **CUL-18**.	
CUL-8: Data Recovery on Historic-Period Sites With Features. The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period archaeological sites with features," consisting of sites SMB-H-143, SMB-H-411, SMB-H-416, and SMB-H-419. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include how to proceed if features or other buried deposits are encountered and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location, recordation equipment and methods to be used and describe any anticipated post processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks: 1. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work.	At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period sites with features. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist. 3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth century can, bottle, and ceramic diagnostic traits. 4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with submeter accuracy (such as UTM 11 North or California Teale Albers). 5. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, if not done previously. Types of seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected. 6. The project owner shall ensure a systematic metal detector survey is completed at each site, and that each hit is investigated. All artifacts and features thus found must be mapped, measured, photographed, and fully described in writing. 7. The project owner shall ensure that all features are recorded, and that any features having subsurface elements are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing. 8. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows: a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms. 9. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the 12 historic-period sites are contributing elements to the DTCCL. 10. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (CUL-18). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
CUL-9: Data Recovery on Historic-Period Sites With Structures. The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period archaeological sites with structures," consisting of site SMB-H-404. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include how to proceed if features or other buried deposits are encountered and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location, recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks: 1. The project owner shall hire a qualified historian to research the locations of these sites and attempt to determine their origins and functions from the historical record. 2. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work. 3. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist. 4. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits. 5. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any manmade features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers). 6. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, if not done previously. Types of seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected. 7. The project owner shall ensure a systematic metal detector survey is completed at each site, and that each "hit" is investigated. All artifacts and features thus found must be mapped, measured, photographed, and fully described in writing. 8. The project owner shall ensure that all structures are mapped, measured, photographed, and fully described in writing, and that all associated features having subsurface elements are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing. 9. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows:	At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period sites with structures. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms. 10. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the three historic-period sites are contributing elements to the DTCCL. 11. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (CUL-18). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).	
CUL-10: Data Recovery on Historic-Period Dump Sites. The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period dump sites," consisting of sites SMB-H-171, SMB-H-178, SMB-H- 403, and SMB-H-427 on the proposed plant site and SMB-H-522/525 along the linear facilities corridor if impacts to the latter cannot be avoided by spanning. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include how to proceed if features or other buried deposits are encountered, and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks: 1. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work. 2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist. 3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits. 4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any manmade features, the limits of any artifact concentrations and features, using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers). 5. The project owner shall ensure that each dump is entirely mapped, measured, photographed, and fully described in writing. 6. The project owner shall ensure that 10 percent of the surface contents of each dump is recorded as follows:	At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period dump sites. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
a. Apply a 1-meter x 1-meter grid to the entire dump and randomly select 10 percent of the units. b. Do a detailed in-field analysis of all artifacts in each unit, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected. c. If any subsurface elements are found in the units, a qualified historical archaeologist shall excavate the part in the unit. All features and contents must be mapped, measured, photographed, and fully described in writing. 7. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows: a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms. c. The letter report for each site shall present preliminary conclusions regarding the period(s) of use of the dump and suggest who the possible users were in each represented period. 8. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the five historic-period dump sites are contributing elements to the DTCCL. 9. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (CUL-18). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).	
CUL-11: Data Recovery on Historic-Period Refuse Sites. The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "historic-period refuse sites," consisting of sites SMB-H-164, SMB-H-166, SMB-H¬287, SMB-H-288, and SMB-H-423. The focus of the recordation upgrade is to determine if these sites can be attributed to the DTC/C-AMA use of the region and are therefore contributors to the DTCCL. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include how to proceed if features or other buried deposits are encountered and the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. Prior to the start of ground disturbance within 30 meters of the sites boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks: 1. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the fieldwork.	At least 15 days prior to ground disturbance, the project owner shall notify the CPM that mapping and upgraded in-field artifact analysis has ensued on six historic-period refuse scatter sites. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
2. The project owner shall, ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist. 3. The project owner shall ensure that, prior to beginning the field work, the field crew members are trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth century can, bottle, and ceramic diagnostic traits. 4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with submeter accuracy (such as UTM 11 North or California Teale Albers). 5. The project owner shall ensure that a detailed in-field analysis of all artifacts types shall be completed, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Artifacts shall not be collected. 6. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows: a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and b. The letter report shall be a concise document the provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms. c. The letter report shall make a recommendation on whether each site is a contributor to the DTTCL. 7. The project owner shall ensure that the data collected from the fieldwork shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the six historic-period sites are contributing elements to the DTCCL. 8. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR (CUL-18). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).	
CUL-12: Data Recovery On Historic-Period Roads. The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research and writes a report on the age and use of two historic period, unimproved roads (SMB-H-600, SMB-H-601), with particular attention paid to their role during the use of the area by the U. S. Army in World War II training maneuvers (DTC/C-AMA). The project owner shall provide the historian's report to the DTCCL PI Historian for use in the possible DTCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.	At least 15 days prior to ground disturbance, the project owner shall submit to the CPM the historian's report documenting the age and historical use of the two roads. Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCL PI-Historian.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
CUL-13: Archival Research on Blythe Army Air Base Reservoir Pipelines. The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research to establish the current existence and locations of the water supply pipelines that connect the Blythe Army Air Base Reservoir pipelines to the former Blythe Army Air Base. The project owner shall ensure that the construction of the project's underground facilities that cross these old pipelines avoids impacting them. The project owner shall provide the historian's report to the DTCCL PI Historian for use in the possible DTCCL NRHP nomination. The project owner may undertake this task prior to Energy Commission certification of the project.	At least 15 days prior to excavating any trenches crossing the old Blythe Army Air Base Reservoir water pipelines, the project owner shall submit to the CPM the historian's report verifying the current presence or absence of the pipelines and, if they are present, a plan indicating how they will be avoided. Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCL PI-Historian
CUL-14: Archival Research on Radio Communications Facility. The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research to evaluate the CRHR eligibility of the radio communications facility, considering all pertinent register criteria, as well as integrity. If the facility is recommended as CRHR-eligible, the project owner shall propose ways to avoid or mitigate, to a less than significant level, the project's impacts to the facility's integrity of setting and integrity of feeling. The project owner may undertake this task prior to Energy Commission certification of the project	At least 45 days prior to construction, the project owner shall submit to the CPM the historian's recommendation, with supporting evidence, on the eligibility of the radio communications facility and, if it is eligible, a plan indicating how the project's impacts to the facility's integrity of setting and integrity of feeling will be avoided or mitigated to a less than significant level. Rationale: Proposed schedule change is in accordance with the project time-line. At least 30 days prior to construction, the project owner shall implement those elements of the submitted avoidance/mitigation plan approved by the CRS.
CUL-15: Worker Environmental Awareness Program (WEAP). Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at lay down areas, roads, and other ancillary areas. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include: 1. A discussion of applicable laws and penalties under the law; 2. Samples or visuals of artifacts that might be found in the project vicinity; 3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed; 4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits; 5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS; 6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;	At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP trained worker to sign. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
7. An informational brochure that identifies reporting procedures in the event of a discovery; 8. An acknowledgement form signed by each worker indicating that they have received the training; and 9. A sticker that shall be placed on hard hats indicating that environmental training has been completed. 10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.	
CUL-16: Construction Monitoring Program. The CPM, working with the project owner, shall ensure that the CRS, alternate CRS, or CRMs, ~~to~~ prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner, monitor full time all ground disturbances: 1. for all project grading; 2. for the trenches for underground communication lines and the natural gas pipeline; 3. for the holes for the transmission line support structures 4. And for the jack-and-bore tunneling for underground conductor or cable lines or pipelines, that they monitor the excavation of the jack-and-bore entry and exit pits and examine, log, and screen auger back dirt samples, as detailed in the CRMMP. Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous paragraph, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than fifty feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material. \A Native American monitor shall be obtained to monitor ground disturbance in all areas described above. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM either will identify potential monitors or will allow ground disturbance to proceed without a Native American monitor. The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered. On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM and to any affected Indian tribes that request such logs. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.	At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log. Monthly, while monitoring is on going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP. At least 48 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM, and any Indian tribes that request such statements. Weekly, during jack-and-bore tunneling for the underground transmission line, the project owner shall provide the CPM with copies of the soil and sediment descriptions and auger-back dirt screening logs kept by the CRS, alternate CRS, or CRMs, as detailed in the CRMMP. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring. If the request involves a decrease in monitoring levels for NAMs, the CPM must notify affected Indian tribes. The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff. Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions. Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.	response to the project owner's transmittals of information. The CPM shall provide a written response, or shall ensure the project owner provides a written response, to such comments within 5 business days.
CUL-17: Authority to Halt Construction; Treatment Of Discoveries. The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PPA, PHA, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS. In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting, as provided in other Conditions, shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred: 1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made. 2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery. 3. The CRS has completed field notes, measurements, and photography for a DPR 523 Primary form. Unless the find can be treated prescriptively, as specified in the CRMMP, the Description entry of the DPR 523 Primary form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM. 4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.	At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, PPA, PHA, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Cultural Resources (cont.)	
CUL-18: Cultural Resources Report (CRR). The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for review and comment and to the BLM Palm Springs archaeologist for review and approval. The final CRR shall be written by or under the direction of the CRS. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, revised and final Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR. If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM and to the BLM Palm Springs archaeologist for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.	Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval. Within 180 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval and to the BLM Palm Springs Field Office archaeologist for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification: of receipt shall be included in an appendix. Within 10 days after the CPM and the BLM Palm Springs Field Office archaeologist approve the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.
CUL-19 COMPLIANCE WITH BLM PROGRAMMATIC AGREEMENT. If provisions in the BLM Blythe Solar Power Plant Programmatic Agreement and associated implementation and monitoring programs conflict with or duplicate these Conditions of Certification, the BLM provisions shall take precedence. Provisions in these Conditions that are additional to or exceed BLM provisions and represent requirements under the Energy Commission's CEQA responsibilities shall continue to apply to the project's activities, contingent on BLM's approval.	
Hazardous Materials	
HAZ-1: The project owner shall not use any hazardous materials not listed in Appendix A, below, or in greater quantities or strengths than those identified by chemical name in Appendix A, below, unless approved in advance by the Compliance Project Manager (CPM).	The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility.
HAZ-2: The project owner shall concurrently provide a Hazardous Materials Business Plan (HMBP), and a Spill Prevention, Control, and Countermeasure Plan (SPCC) to the Riverside County Environmental Health Department (RCEHD), the Riverside County Fire Department (RCFD), and the CPM for review. After receiving comments from the RCEHD, the RCFD, and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final HMBP shall then be provided to the RCEHD for information and to the CPM for approval**.**	At least 60 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan, a Spill Prevention, Control, and Countermeasure Plan, and a Process Safety Management Plan to the CPM for approval.
HAZ-3: The project owner shall develop and implement a Safety Management Plan for the delivery and handling of liquid hazardous materials. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall be applicable during construction, commissioning, and operation of the power plant.	At least 60 days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.
HAZ-5: Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following: 1. perimeter security consisting of fencing enclosing the construction area;	At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Hazardous Materials (cont.)	
2. security guards; 3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors; 4. written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on site or off site; 5. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and 6. evacuation procedures.	
HAZ-6: The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that will be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002). The Operation Security Plan shall include the following: 1. Permanent full perimeter fence or wall, at least eight feet high around the Power Block and Solar Field; 2. Main entrance security gate, either hand operated or motorized; 3. Evacuation procedures; 4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; 5. Written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site; 6. A. a statement (refer to sample, ATTACHMENT A), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy; B. a statement(s) (refer to sample, ATTACHMENT B), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site; 7. Site access controls for employees, contractors, vendors, and visitors; 8. If required by law, a statement(s) (refer to sample, ATTACHMENT C), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.802, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;	At least 30 days prior to the initial receipt of operations-related hazardous materials on site, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Hazardous Materials (cont.)	
9. Closed circuit TV (CCTV) monitoring system, recordable, and viewable in the O & M Building with cameras able to pan, tilt, and zoom, have low-light capability, and are able to view the outside entrance to the O & M Building, and the front gate. The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical power plant components depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, cyber security, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation, after consultation with both appropriate law enforcement agencies and the applicant.	
Noise	
NOISE-1: Public Notification Process. At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site and the linear facilities, by mail or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.	Prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide that telephone number.
NOISE-2: Noise Complaint Process. Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall: 1. use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint; 2. attempt to contact the person(s) making the noise complaint within 24 hours; 3. conduct an investigation to determine the source of noise in the complaint; 4. if the noise is project related, take all feasible measures to reduce the source of the noise; and 5. submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.	Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the CPM, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is performed and complete.
NOISE-3: Employee Noise Control Program – Construction. The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.	At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.
NOISE-6: Construction Restrictions. During project construction, heavy equipment operation and noisy construction work relating to any project features within ¼ mile of an existing residence shall be restricted to the times delineated below, unless a special permit has been issued by the County of Riverside:	Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Noise (cont.)	
Mondays through Fridays: June through September: 6 a.m. to 7 p.m. October through May: 6 a.m. to 6 p.m. *Saturdays*: 9 a.m. to 5 p.m. *Sundays and Federal holidays*: No Construction Allowed Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.	
Paleontological Resources	
PAL-1: The project owner shall provide the CPM with the resume and qualifications of its PRS for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontologic Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontologic resource monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM. The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontologic resource tasks. As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following: 1. Institutional affiliations, appropriate credentials, and college degree; 2. Ability to recognize and collect fossils in the field; 3. Local geologic and biostratigraphic expertise; 4. Proficiency in identifying vertebrate and invertebrate fossils; and 5. At least three years of paleontologic resource mitigation and field experience in California and at least one year of experience leading paleontologic resource mitigation and field activities. The project owner shall ensure that the PRS obtains qualified paleontologic resource monitors to monitor as he or she deems necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications: 1. BS or BA degree in geology or paleontology and one year of experience monitoring in California; or 2. AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.	(1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work. (2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project, stating that the identified monitors meet the minimum qualifications for paleontologic resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties. (3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Paleontological Resources (cont.)	
PAL-2: The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities changes, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM. If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes. At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.	(1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM. (2) If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance. (3) If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.
PAL-3: The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontologic resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontologic resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM. The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 1995) and shall include, but not be limited, to the following: 1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures; 2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the conditions of certification; 3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units; 4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units; 5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;	At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Paleontological Resources (cont.)	
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed; 7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits; 8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontologic resources; 9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and 10. A copy of the paleontologic conditions of certification.	
PAL-4: Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training or may utilize a CPM-approved video or other presentation format during the project kick off for those mentioned above. Following initial training, a CPM-approved video or other approved training presentation/materials, or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM. The WEAP shall address the possibility of encountering paleontologic resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The training shall include: 1. A discussion of applicable laws and penalties under the law; 2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity; 3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontologic resource; 4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM; 5. An informational brochure that identifies reporting procedures in the event of a discovery; 6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and A sticker that shall be placed on hard hats indicating that environmental training has been completed.	(1) At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow. (2) At least 30 days prior to ground disturbance, the project owner shall submit the training program presentation/materials to the CPM for approval if the project owner is planning to use a presentation format other than an in-person trainer for training. (3) If the owner requests an alternate paleontologic trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization. (4) In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or other approved format) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Paleontological Resources (cont.)	
PAL-5: The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM. The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontologic resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows: 1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval. 2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontologic resource activities. The PRS may informally discuss paleontologic resource monitoring and mitigation activities with the CPM at any time. 3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontologic resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification. 4. For any significant paleontologic resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontologic find. The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontologic activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.	The project owner shall ensure that the PRS submits the summary of monitoring and paleontologic activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.
PAL-6: The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontologic resource materials encountered and collected during project construction.	The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved paleontologic resource report (see Condition of Certification **PAL-7**). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontologic mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Paleontological Resources (cont.)	
PAL-7: The project owner shall ensure preparation of a Paleontologic Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the CPM for review and approval. The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontologic resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontologic resources have been mitigated below the level of significance.	Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM**.**
Socioeconomics	
SOCIO-1: The project owner shall submit a "No Trespassing" letter to the satisfaction of the Colorado River Station of the Riverside County Sheriff's Department. The "No Trespassing" letter shall remain on file throughout construction and operation of the project.	At least 30 days prior to the start of construction, the project owner shall provide a copy of the letter to the Colorado River Station of the Riverside County Sheriff's Department for review and to the CPM for review and approval.
Soil and Water Resources	
GEO-1: The Soils Engineering Report required by Section 1803 of the 2010 CBC should specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of corrosive soils, hydrocompaction or dynamic compaction; and the presence of expansive clay soils. The report should also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.	The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for liquefaction; settlement due to compressible soils, ground water withdrawal, hydrocompaction, or dynamic compaction; and the possible presence of expansive clay soils, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.
SOIL&WATER-1: Drainage Erosion and Sedimentation Control Plan. Prior to site mobilization, the project owner shall obtain the Compliance Project Manager (CPM) approval of the Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during project construction and operations as normally administered by the County of Riverside. The DESCP must ensure proper protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, include provisions for sediment and stormwater retention from both the power block, solar fields and transmission right of way to meet any Riverside County requirements, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. The DESCP shall contain, at minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices (BMP) to be implemented during site mobilization, excavation, construction, and post construction (operating) activities. A. ***Vicinity Map*** – A map(s), at a minimum scale one- inch to 500 feet, shall be provided indicating the location of all project elements (construction sites, laydown area, pipelines) with depictions of all significant geographic features including swales, storm drains, and sensitive areas. B. ***Site Delineation*** – All areas subject to soil disturbance for the proposed project (project phases, laydown area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.	No later than 30 days prior to start of site mobilization, the project owner shall submit a copy of the final DESCP to the CPM for review and comment and to the County of Riverside and the CRBWQCB if required. The CPM shall consider comments if received by the county and CRBRWQCB before approval of the DESCP. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1, and relevant portions of the DESCP shall clearly show approval by the chief building official. The project owner shall provide in the monthly compliance report a narrative on the effectiveness of the drainage, erosion, and sediment-control measures and the results of monitoring and maintenance activities. Once operational, the project owner shall update and maintain the DESCP for the life of the project and shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
C. ***Watercourses and Critical Areas*** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. It shall indicate the proximity of those features to the proposed project construction, laydown, and landscape areas and all transmission and pipeline construction corridors. Furthermore, earthwork and temporary construction related activities shall be conducted such that off-site resources are protected from impacts due to redirection of flood flows around and through the site. Construction activities shall proceed in a manner so as to minimize exposure of facilities to construction period flooding. Any temporary diversion channels shall be adequately designed for flood conveyance capable of protecting the construction site while not contributing to on-site or off-site erosion.	
D. ***Drainage Map*** – The DESCP shall provide a topographic site map(s), at a minimum scale of 1 inch to 200 feet, showing existing, interim, and proposed drainage swales and drainage systems and drainage-area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet.	
E. ***Drainage of Project Site Narrative*** – The DESCP shall include a narrative of the drainage measures necessary to protect the site and potentially affected soil and water resources within the drainage downstream of the site. The narrative shall include the summary pages from the hydraulic analysis prepared by a professional engineer and erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage features.	
F. ***Clearing and Grading Plans*** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.	
G. ***Clearing and Grading Narrative*** – The DESCP shall include a table with the estimated quantities of material excavated or filled for the site and all project elements (project site, laydown area, transmission and pipeline corridors, roadways, and bridges) whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.	
H. ***Soil Wind and Water Erosion Control*** – The plan shall address exposed soil treatments to be used during construction and operation of the proposed project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed project site that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.	
I. ***Best Management Practices Plan*** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control storm water runoff and sediment transport.	
J. ***Best Management Practices Narrative*** – The DESCP shall show the location (as identified in (I) above), timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during all	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
project element (site, pipelines) excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information would be available. K. ***Project Schedule*** – The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each Project element for each phase of construction. L. ***Erosion Control Drawings*** – The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion control specialist. M. ***Agency Comments*** – The DESCP shall include copies of recommendations, conditions, and provisions from the California Department of Fish and Game (CDFG) and Colorado River Basin Regional Water Quality Control Board (CRBWQCB). N. **Monitoring Plan** – Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches.	
SOIL&WATER-2: To mitigate the impact from project pumping, the project owner shall identify and implement offset measures to mitigate the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin (USGS) to the Palo Verde Mesa Groundwater Basin (USGS). The project owner shall implement **SOIL&WATER-16** to evaluate the change in recharge over the life of the project including any latency effects from project pumping. The offset measures shall consider water conservation projects such as payment for irrigation improvements in Palo Verde Irrigation District, land fallowing, and/or BLM's Tamarisk Removal Program or other proposed mitigation activities acceptable to the CPM. The activities proposed for mitigation shall be outlined in a Water Supply Plan that shall be provided to the CPM for review and approval and which shall include the following at a minimum: A. Identification of the water offsets as determined in **SOIL&WATER-16**; B. Demonstration of the project owner's ability to conduct the activity; C. Whether any governmental approval of the identified offset will be needed, and if so, whether additional approval will require compliance with CEQA or NEPA; D. Demonstration of how much water is provided by each of the offset measures; E. An estimated schedule for completion of the activities; F. Performance measures that would be used to evaluate the amount of water replaced by the proposed offset measures; and G. A Monitoring and Reporting Plan outlining the steps necessary and proposed frequency of reporting to show the activities are achieving the intended benefits of the water supply offsets;	The project owner shall submit a Water Supply Plan to the CPM for review and approval 30 days before the start of extraction of groundwater for construction or operation. The project owner shall implement the activities reviewed and approved in the Water Supply Plan in accordance with the agreed upon schedule in the Water Supply Plan. If agreement with the CPM on identification or implementation of offset activities cannot be achieved the project owner shall immediately halt construction or operation until the agreed upon activities can be identified and implemented.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
SOIL&WATER-3: Project Groundwater Wells, Pre-Well Installation. The project owner proposes to construct and operate up to three (3) onsite groundwater supply wells that produce water from the Palo Verde Mesa Groundwater Basin (PVMGB). The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction permits and requirements. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the County of Riverside and fees normally required for the county's well permit, with copies to the CPM. The project shall not construct a well or extract and use groundwater until an approval has been issued by the CPM to construct and operate the well. Wells permitted and installed as part of pre-construction field investigations that subsequently are planned for use as project water supply wells require CPM approval prior to their use to supply water to the project. ***Post-Well Installation*.** The project owner shall provide documentation as required under County permit conditions to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed. The project owner shall ensure the Well Completion reports are submitted. The project owner shall ensure compliance with all county water well standards and County requirements for the life of the wells and shall provide the CPM with two copies each of all monitoring or other reports required for compliance with the County of Riverside water well standards and operation requirements, as well as any changes made to the operation of the well.	The project owner shall do all of the following: a. No later than 60 days prior to the construction of the onsite groundwater production wells, the project owner shall submit to the CPM a copy of the water well construction packet submitted to the County of Riverside. b. No later than 30 days prior to the construction of the onsite groundwater production wells, the project owner shall submit a copy of written concurrence received from the County of Riverside that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program. The CPM shall provide approval to the project owner of the well location and operation within 10 days of receipt of the County of Riverside's concurrence with the proposed well construction activities. c. No later than 60 days after installation of each well at the project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports. Additionally no later than 60 days after installation of each well the project owner shall submit documentation to the CPM and the CRBRWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) and that any onsite drilling sumps used for Project drilling activities were removed in compliance with 23 CCR section 2511(c) During well construction and for the operational life of the well, the project owner shall submit two copies to the CPM of any proposed well construction or operation changes.
SOIL&WATER-4: Construction and Operation Water Use. The proposed project's use of groundwater during construction shall not exceed 1,200 af during the 48 months of construction and an annual average of 40 afy during operation. Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project water use and to monitor and record, in gallons per day, the total volume(s) of water supplied to the project from all water sources. The metering devices shall be operational for the life of the project.	At least 10 days prior to the start of groundwater pumping for construction of the proposed project, the project owner shall submit to the CPM a copy of evidence that metering devices have been installed and are operational. Beginning six months after the start of construction, the project owner shall prepare a semi-annual summary of amount of water used for construction purposes. The summary shall include the monthly range and monthly average of daily water usage in gallons per day. The project owner shall prepare an annual summary, which shall include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary shall also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
SOIL&WATER-5: Groundwater Level Monitoring, Mitigation, and Reporting Plan. The project owner shall submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan to the CPM for review and approval in advance of using onsite wells to supply groundwater for construction activities. The Groundwater Level Monitoring, Mitigation, and Reporting Plan shall provide detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and operational water use. The plan shall establish pre-construction groundwater level trends from available data that can be quantitatively used as a baseline to establish pre-Project water level trends and to subsequently compare to operational Project pumping water level data. A. ***Prior to Project Construction:*** 1. A well reconnaissance shall be conducted to investigate and document the condition of existing water supply wells as established by the groundwater model and Condition A.2 below, provided that access is granted by the well owners. The reconnaissance shall include sending notices by registered mail to all property owners for wells identified under Condition A.2 below. 2. The monitoring network for offsite wells shall be defined by the groundwater model developed for the AFC, using the lower transmissivity value derived from aquifer testing on the site, so as to provide a conservative estimate of the potential impact, and to identify the area predicted to show a water level change of one foot or more at the end of construction and at the end of operation. 3. Monitor to establish preconstruction conditions. The network of monitoring wells shall make use of existing wells in the basin that are accessible and would satisfy the requirements for the monitoring program. The monitoring network shall also include any monitoring wells that are installed to comply with Waste Discharge Requirements (see SOIL&WATER-7). Provided access is granted, additional wells located outside of the area defined by the model and Condition A.2 above will be located to serve as background monitoring wells. Abandoned wells, or wells no longer in use, that are accessible and provide reliable water level data within the potentially impacted area may also be included as part of the monitoring network. A site reconnaissance will be performed to identify wells that could be accessible for monitoring. As access to these wells is available, historic water level, water quality, well construction and well performance information shall be obtained for both pumping and non-pumping conditions. 4. As access allows, in advance of using onsite wells to supply groundwater for construction activities, groundwater levels will be measured from the off-site and on-site wells within the network and background wells to provide initial groundwater levels for pre-project trend analysis. The installation and monitoring of water levels using pressure transducers shall be done in selected wells to provide an assessment of seasonal trends. 5. Construct water level maps within the PVMGB within the area encompassed by all monitoring wells in A.1, 2, 3 and 4 above prior to construction. As data is available, the Project owner shall prepare trend plots, perform statistical analyses using the Mann-Kendall test (or other CEC-approved statistical analysis method) for trend to assess pre-project water level trends. B. ***During Construction*:** 1. Collect water levels on a quarterly basis throughout the construction period and at the end of the construction period. Perform statistical trend analysis for water levels using the Mann-Kendall test (or other CEC-approved statistical analysis method). Assess the significance of an apparent trend and estimate the magnitude of that trend.	The project owner shall do all of the following: At least 30 days in advance of using onsite wells to supply groundwater for Project construction, a Groundwater Monitoring and Reporting Plan shall be submitted to the CPM for review and approval before completion of Condition of Certification **SOIL&WATER-3** (Well Installation). The Groundwater Monitoring and Reporting Plan shall provide the methodology for monitoring background and site groundwater levels. At least 15 days in advance of using onsite wells to supply groundwater for project construction activities, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A above. The CPM will provide comments to the plan following submittal. CPM approval of the plan is required prior to operation of the site groundwater supply wells. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations. During project operation, the project owner shall submit to the CPM, applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above. Quarterly reports shall be submitted to the CPM 30 days following the end of the quarter. The fourth quarter report shall serve as the annual report and will be provided on January 31 in the following year. During project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above. The quarterly reports shall be provided 30 days following the end of the quarter. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations. No later than March 31 of each year of construction or 60 days prior to project operation, the project owner shall provide to the CPM for review and approval, documentation showing that any mitigation to private well owners during project construction was satisfied, based on the requirements of the property owner as determined by the CPM. During project operation, the project owner shall submit to the CPM applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above. Quarterly reports shall be submitted to the CPM 30 days following the end of the quarter. The fourth quarter report shall serve as the annual report and will be provided on January 31 in the following year. The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
C. ***During Operation*:** 1. On a quarterly basis for the first year of operation and semi-annually thereafter for the following four years, collect water level measurements from any wells identified in the groundwater monitoring program to evaluate operational influence from the project. Quarterly operational parameters (i.e., pumping rate) of the water supply wells shall be monitored as access allows for those wells within the monitoring network. Wells outside the network and their influence on pumping within the network shall be evaluated on a quarterly basis to understand well interference from sources of pumping outside the Project area. 2. On an annual basis, perform statistical trend analysis for water levels data and comparison to predicted water level declines due to project pumping. Analysis of the significance of an apparent trend shall be determined and the magnitude of that trend estimated. Pressure transducer data from groundwater level measuring devices will be used to assess seasonality and diurnal trends in the water level data. Based on the results of the statistical trend analyses and comparison to predicted water level declines due to project pumping, the project owner shall determine the area where the project pumping has induced a drawdown in the water supply at a level of five feet or more below the baseline trend. 3. If water levels have been lowered more than five feet below pre-site operational trends, and monitoring data provided by the project owner show these water level changes are different from background trends or other groundwater pumping and are caused by project pumping, then the project owner shall provide mitigation to the impacted well owner(s). Mitigation shall be provided to the impacted well owners that experience 5 feet or more of project-induced drawdown if the CPM's inspection of the well monitoring data confirms changes to water levels and water level trends relative to measured pre-project water levels, and the well (private owner's well in question) yield or performance has been significantly affected by project pumping. The type and extent of mitigation shall be determined by the amount of water level decline induced by the project, the type of impact, and site specific well construction and water use characteristics. If an impact is determined to be caused by drawdown from more than one source, the level of mitigation provided shall be proportional to the amount of drawdown induced by the project relative to other sources. In order to be eligible, a well owner must provide documentation of the well location and construction, including pump intake depth, and that the well was constructed and usable before project pumping was initiated. The mitigation of impacts shall be determined as follows: a. If project pumping has lowered water levels by five feet or more and increased pumping lifts, increased energy costs shall be calculated. Payment or reimbursement for the increased costs shall be provided on an annual basis. In the absence of specific electrical use data supplied by the well owner, the project owner shall use **SOIL&WATER-6** to calculate increased energy costs. b. If groundwater monitoring data indicate project pumping has lowered water levels below the top of the well screen, and the well yield is shown to have decreased by 10 percent or more of the pre-project average seasonal yield, compensation shall be provided for the diagnosis and maintenance to treat and remove encrustation from the well screen. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen encrustation. Should the well yield reductions be recurring, the project owner shall provide payment or reimbursement for periodic maintenance throughout the life of the project. If with treatment the well yield is incapable of meeting 110 percent of the well owner's historic operational maximum daily demand, dry season demand, or annual demand, or the wells sustainable maximum yield demonstrated through well testing, the well owner should be compensated by reimbursement or well replacement as described under 3.c. below.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
c. If project pumping has lowered water levels to significantly impact well yield so that it can no longer meet its intended purpose, causes the well to go dry, or cause casing collapse, payment or reimbursement of an amount equal to the cost of deepening or replacing the well shall be provided to accommodate these effects. Payment or reimbursement shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well of comparable design and yield (only deeper). The demand for water, which determines the required well yield, shall be determined on a per well basis using well owner interviews, historic well operational records and well testing data, field verification of property conditions and water requirements that are compiled as part of the pre-project well reconnaissance. Well yield shall be considered significantly impacted if it is incapable of meeting 110 percent of the well owner's historical operational maximum daily demand, dry-season demand, or annual demand as documented by the pre-project historical operational records or 100 percent of the maximum sustainable well yield as provided in historic well testing data. If historic well testing data indicates the capacity of the well is higher than the operational data suggests, the well shall be operated for a sufficient period of time acceptable to the CPM, project owner and well owner to demonstrate that its maximum sustainable yield has been impacted solely by the project pumping. If by comparison the well is incapable of meeting 100 percent of the historic maximum sustainable yield demonstrated by the testing, and the reduction in capacity is solely related to the project pumping, the well owner shall be compensated for the lost capacity. Compensation for lost capacity in lieu of well replacement shall be in the form of a lump sum payment equal to the cost of deepening the well to a depth sufficient to return the well yield to its maximum sustainable yield.	
d. The project owner shall notify any owners of the impacted wells within one month of the CPM approval of the compensation analysis for increased energy costs.	
e. Pump lowering – In the event that groundwater is lowered as a result of project pumping to an extent where pumps are exposed but well screens remain submerged the pumps shall be lowered to maintain production in the well. The project shall reimburse the impacted well owner for the costs associated with lowering pumping in proportion to the project contribution to the impact.	
f. Deepening of wells – If the groundwater is lowered enough as a result of project pumping that well screens and/or pump intakes are exposed, and pump lowering is not an option, such affected wells shall be deepened or new wells constructed. The project shall reimburse the impacted well owner for all costs associated with deepening existing wells or construction of a new well in proportion to the project contribution to the impact.	
4. After the first five-year operational and monitoring period the CPM shall evaluate the data and determine if the monitoring program for water level measurements should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the statistically verifiable datasets and trend analysis. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM.	
5. If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of project operation. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this Condition.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
6. At the end of every subsequent five-year monitoring period, the collected data shall be evaluated by the CPM and they shall determine if the sampling frequency should be revised or eliminated. 7. During the life of the project, the project owner shall provide to the CPM all monitoring reports, complaints, studies and other relevant data within 10 days of being received by the project owner.	
SOIL&WATER-6 Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification **SOIL&WATER-5,** the project owner shall calculate the compensation owed to any owner of an impacted well as described below. *Increased cost for energy* = change in lift/total system head x total energy consumption x costs/unit of energy Where: change in lift (ft) = calculated change in water level in the well resulting from project total system head (ft) = elevation head + discharge pressure head elevation head (ft) = difference in elevation between wellhead discharge pressure gauge and water level in well during pumping. discharge pressure head (ft) = pressure at wellhead discharge gauge (psi) X 2.31 The project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this Condition. 1. Any reimbursements to impacted well owners shall be only to those well owners whose wells were in service within six months of the Energy Commission Decision and within the monitoring area predicted by the groundwater modeling Condition A.2. 2. The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs. 3. Compensation shall be provided on an annual basis, as described below. 4. Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.	The project owner shall do all of the following: No later than 30 days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements. The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations. Compensation payments shall be made by March 31 of each year of project operation. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this Condition.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
SOIL&WATER-7: Waste Discharge Requirements. The project owner shall comply with the requirements specified in **Appendix B, C, and D**. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c)	No later than 60 days prior to any wastewater or storm water discharge or use of land treatment units, the project owner shall provide documentation to the CPM, with copies to the CRBRWQCB, demonstrating compliance with the WDRs established in **Appendices B, C, and D**. Any changes to the design, construction, or operation of the evaporation basins, land treatment units, or storm water system shall be requested in writing to the CPM, with copies to the CRBRWQCB, and approved by the CPM, in consultation with the CRBRWQCB, prior to initiation of any changes. The project owner shall provide to the CPM, with copies to the CRBRWQCB, all monitoring reports required by the WDRs, and fully explain any violations, exceedances, enforcement actions, or corrective actions related to construction or operation of the evaporation basins, treatment units, or storm water system.
SOIL&WATER-8: Septic System and Leach Field Requirements. The project owner shall comply with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (California Code of Regulations Title 24, Part 5) regarding sanitary waste disposal facilities such as septic systems and leach fields. The septic system and leach fields shall be designed, operated, and maintained in a manner that ensures no deleterious impact to groundwater or surface water. Compliance shall include an engineering report on the septic system and leach field design, operation, maintenance, and loading impact to groundwater. If it is determined based on the engineering report that groundwater may be impacted, the project owner shall include a groundwater quality monitoring program. This program can utilize monitoring wells (if appropriate) used as part of groundwater monitoring in Condition of Certification **SOIL&WATER-7**. The engineering report will specify the proposed groundwater monitoring program (if required), constituents of concern, monitoring frequency and other elements as needed as part of any groundwater monitoring program.	The project owner shall submit all necessary information and the appropriate fee to the County of Riverside and the CRBRWQCB to ensure that the project has complied with county and state sanitary waste disposal facilities requirements. Written assessments prepared by the County of Riverside and the CRBRWQCB regarding the project's compliance with these requirements must be submitted to the CPM for review and approval 30 days prior to the start of power plant operation.
SOIL&WATER-9: Groundwater Production Reporting. The project is subject to the requirement of Water Code Sections 4999 et. seq. for reporting of groundwater production in excess of 25 acre feet per year.	The project owner shall file an annual "Notice of Extraction and Diversion of Water" with the SWRCB in accordance with Water Code Sections 4999 et. seq. The project Owner shall include a copy of the filing in the annual compliance report.
SOIL&WATER-10: The project owner will prepare both a Provisional Closure Plan and a Final Closure Plan that will meet the requirements of the BLM. The project owner shall identify likely closure scenarios and develop facility closure plans in accordance with COM-15 "Facility Closure Plans" of the General Conditions. Actions to be taken to avoid or mitigate long-term impacts related to water and wind erosion after the facility's closure need to be identified. Actions may include such measures as a facility closure SWPPP, revegetation and restoration of disturbed areas, post-closure maintenance, collection and disposal of project materials and chemicals, and access restrictions.	One (1) year after initiating commercial operation, the project owner must submit a Provisional Closure Plan and cost estimate for permanent closure to the CPM for review and approval. Three (3) years prior to closing, the owner must submit a Final Closure Plan to the CPM for review and approval. The project owner shall amend these documents as necessary, with approval from the CPM, should the facility closure scenario change in the future.
SOIL&WATER-11: Revised Project Drainage Report and Plans. The project owner shall provide a revised Drainage Report which includes the following additional information: A. A detailed explanation of the large differences in pre- and post-project peak discharges and flood volumes along the downstream (east) project boundary. B. Pre- and post development drainage maps which include the following information: 1. All topographic data used to establish the overall watershed boundaries as well as the sub-basin boundaries.	The project owner shall submit a Revised Project Drainage Report with the 30 percent Grading and Drainage Plans to the CPM for their review and comments sixty (60) days before project mobilization. The project owner will address comments provided by the CPM until approval of the report is issued. All comments and concepts presented in the approved Revised Project Drainage Report with the 30 percent Grading and Drainage Plans will be included in the final Grading and Drainage Plans. The Revised Project Drainage Report and 30 percent Grading and Drainage Plans shall be approved by the CPM.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
2. A specific discussion of how the proposed onsite drainage design will protect the facility from erosion. 3. Peak flow values at all downstream points of discharge from the Project. Any other information needed to allow a correlation between the FLO-2D model and the proposed drainage design.	
SOIL&WATER-12: Detailed FLO-2D Analysis. The project owner shall provide a detailed hydraulic analysis utilizing FLO-2D which models pre- and post-development flood conditions for the 10-, 25- and 100-year storm events. The methods and results of the analysis shall be fully documented in a Technical Memorandum or in the revised Project Drainage Report. Graphical output must include depth and velocity mapping as well as mapping which graphically shows the changes in both of these parameters between the pre- and post development conditions. Color shading schemes used for the mapping must be consistent between all maps as well as clear and easily differentiated between designated intervals for hydraulic parameters. Intervals to be used in the mapping are as follows: 1. Flow Depth: at 0.20 ft intervals up to 1 ft, and 0.40 ft intervals thereafter. 2. Velocity: 0.5 ft/s intervals Digital input and output files associated with the FLO-2D analysis must be included with all submittals. The results of this analysis will be used for design of the 30 percent project grading and drainage plans.	The project owner shall submit a detailed FLO-2D analysis to the CPM for review and comments with the 30 percent plan Grading and Drainage Plans and revised Project Drainage Report required in **SOIL&WATER-11**. The project owner will address comments provided by the CPM until approval of the analysis is issued.
SOIL&WATER-13 through SOIL&WATER-15 (deleted)	
SOIL&WATER-16: Estimation Of Surface Water Impacts. To further assess the impacts from project pumping, the project owner shall estimate the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin (USGS) to the Palo Verde Mesa Groundwater Basin (USGS). This estimate may be used for determining the appropriate offset volume in accordance with **SOIL&WATER-2**. The project owner shall do the following to provide an estimate for review and approval by the CPM: 1. The project owner shall conduct a detailed analysis of the contribution of surface water to the PVMGB from the project's groundwater extraction activities at the end of the 30 year operational period. The detailed analysis shall include: a. The conceptual model developed in the AFC and the Staff Assessment, and any changes resultant from further analysis in support of numerical modeling; b. The use of an appropriately calibrated and constructed groundwater flow model of the Palo Verde Valley and Palo Verde Mesa Groundwater Basin, inclusive of the Mesa and floodplain shall include: i. Horizontal and vertical geometry information gained through on- and offsite investigations conducted as part of the hydrogeological field investigations for the AFC, and any subsequently documented investigation performed as part of the model development ; ii. Aquifer properties developed as part of the AFC and any subsequently documented investigations performed as part of the model development, and an assessment of aquifer properties available from other published sources. The properties used shall be representative of the available data, and will be used in calibration of the flow model under ASTM standards and methods.; and	At least 90 days prior to initiation of groundwater pumping for grading activities, the project owner shall submit to the CPM for their review and approval a report detailing the results of the modeling effort. The report shall include the estimated amount of subsurface water flowing from the surface water due to project pumping. This estimate shall be used for determining the appropriate volume of water for mitigation in accordance with **SOIL&WATER-2**.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
iii. The modeling effort shall include a sensitivity analysis where in the most sensitive variables will be identified and varied within a reasonable range outside of the calibration value to provide an assessment of the range of potential impacts from the project pumping on the recharge from the Palo Verde Valley Groundwater Basin to the Palo Verde Mesa Groundwater Basin. c. Reporting of the results of the modeling effort. d. Estimation of the increased contribution of surface water discharge to groundwater and the change in recharge to the Palo Verde Mesa Groundwater Basin attributable to project groundwater pumping. 2. The analysis shall include the following elements: a. The change in groundwater flux to the regional aquifer from surface water sources attributable to project pumping in afy for the life of the project (30 years) until pre-project (within 95 percent) conditions are achieved; b. A sensitivity analysis that would provide a range in the potential changes in flux relative to variation in the key model variables as a result of project pumping for life of the project until pre-project (within 95 percent) conditions are achieved; 3. The project owner shall present the results of the conceptual model, numerical model, transient runs and sensitivity analysis in a report for review and approval by the CPM. The report shall include all pertinent information regarding the development of the numerical models. The report shall include: a. Introduction b. Previous Investigations c. Conceptual Model d. Numerical Model and Input Parameters e. Sensitivity Analysis f. Transient Modeling Runs g. Conclusions	
SOIL&WATER-17 and SOIL&WATER-18 (deleted)	
SOIL&WATER-19: The project owner shall reduce impacts caused by large storms by ensuring solar panels, drainage washes that will have solar panels, and perimeter fencing are designed to accommodate the 100-year storm event, establishing ongoing maintenance and inspection of storm water controls, and implementing a response plan to clean up damage and address ongoing issues. The project owner shall ensure that the solar panels, drainage washes that will have solar panels are designed and installed to accommodate storm water scour that may occur as a result of a 100-year, 24-hour storm event. The analysis of the storm event and resulting pylon stability shall be provided within a Pylon Insertion Depth and Solar Panel Stability Report to be completed by the project owner. This analysis shall incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic storm water modeling performed by the project owner. The modeling shall be completed using methodology and assumptions approved by the CPM.	At least sixty (60) days prior to installation of the first pylon, the project owner shall submit to the CPM a copy of the Pylon Insertion Depth and Solar Panel Stability Report for review and approval prior to construction. At least sixty (60) days prior to commercial operation, the project owner shall submit to the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at all times. The project owner shall prepare an annual summary of the number of solar panels that fail due to damage, cause and extent of the damage, and cleanup and mitigation performed for each damaged solar panel. The annual summary shall also

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
The project owner shall also develop a Storm Water Damage Monitoring and Response Plan to evaluate potential impacts from storm water, including damage to drainage washes, perimeter fencing, and solar panel supports that fail due to storm water flow or otherwise break and scatter panel debris or other potential pollutants on to the ground surface. The basis for determination of pylon embedment depths shall employ a step-by-step process as identified below and approved by the CPM: A. Determination of peak storm water flow within each sub-watershed from a 100-year event: 1. Use of *Riverside County Flood Control and Water Conservation District Hydrology Manual (Riverside County Manual) or other methodologies approved by the CPM* to specify hydrologic parameters to use in calculations; and 2. Flo-2D model (or other approved models) must be developed to calculate storm flows from the mountain watersheds upstream of the project site, and flood flows at the project site, based upon hydrologic parameters from Riverside County. B. Determination of potential total pylon scour depth: 1. Potential channel erosion depths must be determined using the calculated design flows, as determined in A above, combined with Flo-2D to model onsite sediment transport. 2. Potential local scour must be determined using the calculated design flows, as determined in A above, combined with the Federal Highway Administration (FHWA) equation for local bridge pier scour from the FHWA 2001 report, “Evaluating Scour at Bridges” or other similar methodologies approved by the CPM. C. The results of the scour depth calculations and pylon stability testing must be used to determine the minimum necessary pylon embedment depth within the active channels. In the inactive portions of the alluvial fans that are not subject to channel erosion and local scour, the minimum pylon embedment depths must be based on the results of the pylon stability testing. D. The results of the calculated peak storm water flows and channel erosion and pylon scour analysis together with the recommended pylon installation depths shall be submitted to the CPM for review and approval sixty (60) days prior to the start of solar panel installation. The Storm Water Damage Monitoring and Response Plan shall be submitted to the CPM for review and approval and shall include the following: 1. Detailed maps showing the installed location of all solar panels within each project phase; 2. Description of the method of removing all soil spoils should any be generated; 3. Each solar panel should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground; 4. Minimum Depth Stability Threshold to be maintained of at pylons to ensure long-term stability under applicable wind, water (flowing and static), and debris loading effects;	report on the effectiveness of the modified drainage washes against storms, including information on the damage and repair work or associated erosion control elements. The project owner shall submit proposed changes or revisions to the Storm Water Damage Monitoring and Response Plan to the CPM for review and approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Soil and Water Resources (cont.)	
5. Above and below ground construction details of a typical installed solar panel; 6. BMPs to be employed to minimize the potential impact of broken panels to soil resources; 7. Methods and response time of panel cleanup and measures that may be used to mitigate further impact to soil resources from broken fragments; and 8. Monitoring, documenting, and restoring the adjacent offsite downstream property when impacted by sedimentation or broken panel shards. A plan to monitor and inspect periodically, before first seasonal and after every storm event: 1. Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris 2. Solar panels within drainages or subject to drainage overflow or flooding: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport. 3. Drainage washes: Inspect for substantial migration or changes in depth, and transport of broken panels. 4. Adjacent offsite downstream property: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken panels. Short-Term Incident-Based Response: 1. Security and Tortoise Exclusion Fence: repair damage, and remove built-up sediment and debris. 2. Solar panels: Remove broken panels, damaged structure, and damaged wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the panels to avoid exposure to broken glass. 3. Drainage washes: no short-term response necessary unless changes indicate risk to facility structures. Long-Term Design-Based Response: 1. Propose operation/BMP modifications to address ongoing issues. Include proposed changes to monitoring and response procedures, frequency, or standards. 2. Replace/reinforce pylons no longer meeting the Minimum Depth Stability Threshold or remove the panels to avoid impacts from broken panels. 3. Propose design modifications to address ongoing issues. This may include construction of active storm water management diversion channels and/or detention ponds. Inspection, short-term incident response, and long-term design based response may include activities both inside and outside of the project boundaries. For activities outside of the project boundaries the owner shall ensure all appropriate environmental review and approval has been completed before field activities begin.	

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Traffic and Transportation	
TRANS-1: Parking and Staging. Prior to start of construction of the BSPP and all related facilities, the project owner shall develop and implement a parking and staging plan for all phases of project construction to ensure that all project-related parking occurs on-site or in designated off-site parking areas.	At least 60 days prior to start of site mobilization, the project owner shall submit the plan to the County of Riverside, City of Blythe, and BLM Operations Manager for review and comment, and to the CPM for review and approval. The requirements outlined in this Condition of Certification shall be coordinated with requirements outlined in Condition of Certification **TRANS-3**.
TRANS-2: Traffic Control Plan. Prior to start of construction of the Blythe Solar Power Project (BSPP) the project owner shall prepare and implement a Traffic Control Plan (TCP) for the Blythe Solar Power Project construction and operation traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules, and designated workforce and delivery routes. The project owner shall consult with the County of Riverside and the Department of Transportation (Caltrans) District 8 office in the preparation and implementation of the Traffic Control Plan and shall submit the proposed Traffic Control Plan to the County of Riverside and the Department of Transportation (Caltrans) District 8 office in sufficient time for review and comment and to the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan. The project owner shall provide a copy of any written comments from the County of Riverside and the Department of Transportation (Caltrans) District 8 office and any changes to the Traffic Control Plan to the CPM prior to the proposed start of construction. The Traffic Control Plan shall include: 1. A work schedule and end-of-shift departure plan designed to ensure that stacking does not occur on intersections necessary to enter and exit the project sites. The project owner shall consider using one or more of the following measures designed to prevent stacking: staggered work shifts, off-peak work schedules as well as restricting travel to and departures from each project site to 10 or fewer vehicles every three minutes during peak travel hours on Interstate 10. The project owner may use any of the above traffic measures or any other measures if the project owner can demonstrate that the implemented measures would ensure that Interstate 10 operates at a Level of Service (LOS) C or higher during the peak travel hours. 2. Provisions for an incentive program such as an employer-sponsored Commuter Check Program to encourage construction workers to carpool and/or use van or bus service. 3. Limitation on truck deliveries to the project sites to only off-peak hours to ensure adequate exit and entry at appropriate intersections. 4. Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction-related traffic flow. 5. Placement of signage, lighting, and traffic control device at the project construction site and laydown areas.	At least 60 calendar days prior to the start of construction, including any grading or site remediation on the power plant site or its associated easements, the project owner shall submit the proposed traffic control plan to the County of Riverside and the Department of Transportation (Caltrans) District 8 office for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the County of Riverside and the Department of Transportation (Caltrans) District 8 office requesting review and comment. At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from either the County of Riverside and the Department of Transportation (Caltrans) District 8 office, along with any changes to the proposed traffic control plan to the CPM for review and approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Traffic and Transportation (cont.)	
6. Signage along eastbound and westbound appropriate roads and at the entrance of each of the I-10 northbound and southbound off-ramps at appropriate roads notifying drivers of construction traffic throughout the duration of the construction period. 7. A heavy-haul plan designed to address the transport and delivery of heavy and oversized loads requiring permits from Department of Transportation (Caltrans) or other state and federal agencies. 8. Parking for workforce and construction vehicles. 9. Emergency vehicle access to the project site.	
TRANS-3: Limitations on Vehicle Size and Weight. The project owner shall comply with limitations imposed by Caltrans District 8 office and other relevant jurisdictions including County of Riverside and City of Blythe on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for use of roadways.	At least 30 calendar days prior to the start of construction, the project owner shall provide copies of permits obtained from either the County of Riverside or the Caltrans District 8 office to the CPM. In the Monthly Compliance Reports (MCRs), the project owner shall submit copies of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.
TRANS-4: Encroachment into Public Rights of Way. The project owner or its contractor shall comply with Caltrans and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.	In the monthly compliance reports (MCRs), the project owner shall submit copies of permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.
TRANS-5: Restoration of All Public Roads, Easements, and Rights-of-Way. The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities to original or near-original condition in a timely manner, as directed by the CPM. Repairs and restoration of access roads may be required at any time during the construction phase of the project to assure safe ingress and egress. Prior to the start of site mobilization, the project owner shall consult with the County of Riverside and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of Riverside and Caltrans consider postponement of public right-of-way repair or improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner regarding any concurrent construction-related activities that are planned or in progress and cannot be postponed.	At least 30 days prior to the start of mobilization, the project owner shall photograph or videotape all affected public roads, easements, and right-of-way segments and/or intersections and shall provide the CPM, the affected local jurisdictions and Caltrans (if applicable) with a copy of these images. The project owner shall rebuild, repair and maintain all public roads, easements, rights-of-way in a usable condition throughout the construction phase of the project. Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the County of Riverside and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide a letter signed by the County of Riverside and Caltrans District 8 stating their satisfaction with the repairs to the CPM.
TRANS-6: Securing Permits/Licenses to Transport Hazardous Materials. The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.	The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Traffic and Transportation (cont.)	
TRANS-7 (Deleted)	
TRANS-8 : Prior to the start of operation of any phase of the project, the project owner shall prepare an Avigation Easement in accordance with Appendix D of the California Airport Land Use Planning Handbook and have it signed by the Bureau of Land Management.	At least 60 days prior to the start of construction, the project owner shall submit a BLM-signed avigation easement to the CPM for review and approval. Once approved by the CPM, applicant shall send the Avigation Easement to the Riverside County Land Use Commission staff for review and recording purposes. Once recorded, applicant shall send a copy of the recorded document to the CPM.
TRANS-9 (Deleted)	
TRANS-10: Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related glare complaints. The project owner or authorized agent shall: 1. Use the Complaint Resolution Form (below), or functionally equivalent procedure acceptable to the CPM, to document and respond to each complaint. 2. Attempt to contact the person or persons making the complaint within 24 hours. If not contacted within 24 hours, attempt to contact the person or persons for a reasonable time period, to be determined by the CPM. 3. Conduct an investigation to determine the source of glare related to the complaint. 4. If the glare is project related, take all feasible measures to reduce the glare at its source. As soon as the complaint has been resolved to the complainant's satisfaction, submit to the CPM a report in which the complaint as well as the actions taken to resolve the complaint are documented. The report shall include (1) a complaint summary, including the name and address of the complainant; (2) final results of glare reduction efforts; and (3) a signed statement by the complainant, if obtainable, in which complainant states that the glare problem is resolved to his or her satisfaction.	Within five business days of receiving a glare complaint, the project owner shall file with the City of Blythe Development Services Department, the Riverside County Planning Department, and the CPM a copy of the Glare Complaint Resolution Form, documenting the resolution of the complaint. If mitigation is required to resolve a complaint and the complaint is not resolved within three business days, the project owner shall submit an updated Glare Complaint Resolution Form when the mitigation is implemented.
TRANS-11: Prior to the start of construction of the transmission line, the project owner shall submit a plan identifying measures to be taken to mark and light the lines and poles beneath runway approaches, typical pattern entry corridors, and typical departure routes pursuant to criteria included in FAAC 70/7460-1K. The plan shall identify the number and location of poles that are subject to the criteria and the exact measures to be taken to properly mark and light the poles in conformance with FAAC 70/7460.	At least 30 days prior to the start of transmission line mobilization, the project owner shall provide a construction plan for review and approval. Once the plan has been approved and implemented, the project owner shall provide documentation showing completion of the transmission line, including the required marking and lighting measures.
TRANS-12: The project owner shall use textured glass or anti-reflective coating on all photovoltaic (PV) solar panels.	At least 30 days prior to construction of PV panels, the project owner shall provide documentation that textured glass or anti-reflective coating will be used on all PV solar panels.
TRANS-13: The project owner shall construct all exposed PV panel support structures with matte or non-reflective surfaces.	At least 30 days prior to installation of PV panel supports, the project owner shall provide documentation showing that matte or non-reflective surfaces will be used on all PV panel support structures. matt or burnished surfaces on all PV solar panels.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Waste Management	
WASTE-1: The project owner shall prepare a UXO Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The project owner shall submit the plan to the CPM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following: 1. A description of the training program outline and materials, and the qualifications of the trainers; and 2. Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); and 3. Work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas. The project owner shall provide documentation of the plan and provide survey results to the CPM.	The project owner shall submit the UXO Identification, Training and Reporting Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site. The results of geophysical surveys shall be submitted to the CPM within 30 days of completion of the surveys.
WASTE-2: The project owner shall provide the résumé of an experienced and qualified Professional Engineer or Professional Geologist to the CPM for review and approval. The résumé shall show experience in remedial investigation and feasibility studies. This Professional Engineer or Professional Geologist shall be available during site characterization (if needed), excavation, grading, and demolition activities. The Professional Engineer or Professional Geologist shall be given authority by the project owner to oversee any earth-moving activities that have the potential to disturb contaminated soil and impact public health, safety, and the environment.	At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM for review and approval.
WASTE-3: If potentially contaminated soil is identified during site characterization, excavation, grading, or demolition at either the proposed site or linear facilities—as evidenced by discoloration, odor, detection by handheld instruments, or other signs—the Professional Engineer or Professional Geologist shall inspect the site; determine the need for sampling to confirm the nature and extent of contamination; and provide a written report to the project owner, representatives of Department of Toxic Substances Control (DTSC) or Regional Water Quality Control Board (RWQCB), the Compliance Project Manager (CPM) stating the recommended course of action. Depending on the nature and extent of contamination, the Professional Engineer or Professional Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If in the opinion of the Professional Engineer or Professional Geologist significant remediation may be required, the project owner shall contact the CPM, and representatives of the DTSC or RWQCB for guidance and possible oversight.	The project owner shall submit any reports filed by the Professional Engineer or Professional Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.
WASTE-4: The project owner shall submit a Construction Waste Management Plan to the CPM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following: 1. a description of all construction waste streams, including projections of frequency, amounts generated and hazard classifications; 2. a survey of structures to be demolished that identifies the types of waste to be managed; and 3. management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods, and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.	The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Waste Management (cont.)	
WASTE-5: The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency (USEPA) prior to generating any hazardous waste during project construction and operations.	The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM in the next scheduled compliance report.
WASTE-6: Upon notification of any impending waste management-related enforcement action related to project site activities by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts for the project, and describe the owner's response to the impending action or if a violation has been found, how the violation will be corrected.	The project owner shall notify the CPM in writing within 10 days of receiving written notice from authorities of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed as a result of a finalized action against the project.
WASTE-7: The project owner shall submit the Operation Waste Management Plan to the CPM for review and approval. The plan shall contain, at a minimum, the following: 1. a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications; 2. management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans; 3. information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary; 4. a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and 5. a detailed description of how facility wastes will be managed and disposed upon closure of the facility.	The project owner shall submit the Operation Waste Management Plan to the CPM for approval no fewer than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary. The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year, provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan, and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.
WASTE-8 (Deleted)	
WASTE-9: The project owner shall ensure that all accidental spills or unauthorized releases of hazardous substances, hazardous materials, and hazardous waste are documented and remediated, and that wastes generated from accidental spills and unauthorized releases are properly managed and disposed of in accordance with all applicable federal, state, and local requirements. For the purpose of this Condition of Certification, “release” shall have the definition in Title 40 of the Code of Federal Regulations, Part 302.3.	A copy of the accidental spill or unauthorized release documentation shall be provided to the CPM within 30 days of the date the release was discovered.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Waste Management (cont.)	
The project owner shall document management of all accidental spills and unauthorized releases of hazardous substances, hazardous materials, and hazardous wastes that occur on the project property or related linear facilities. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.	
WASTE-10: The project owner shall ensure that all non-hazardous, non-recyclable, and non-reusable construction and operation waste is not diverted to Desert Center Landfill or Oasis Sanitary Landfill.	The project owner shall document all project-related solid waste disposal actions to the Compliance Project Manager annually.
Worker Safety	
WORKER SAFETY-1: The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following: 1. A Construction Personal Protective Equipment Program; 2. A Construction Exposure Monitoring Program; 3. A Construction Injury and Illness Prevention Program; 4. A Construction heat stress protection plan that implements and expands on existing Cal OSHA regulations as found in 8 CCR 3395; 5. A Construction Emergency Action Plan; 6. A Construction Flood Safety Plan; and 7. A Construction Fire Prevention Plan. The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, the Construction Flood Safety Plan, and the Heat Stress Protection Plan shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Riverside County Fire Department for review and comment prior to submittal to the CPM for approval.	At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program.
WORKER SAFETY-2: The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following: 1. An Operation Injury and Illness Prevention Plan; 2. An Operation heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395); 3. A Best Management Practices (BMP) for the storage and application of herbicides;	At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Worker Safety (cont.)	
4. An Emergency Action Plan that includes safety measures, engineering controls, and BMPs to address potential electrical shock hazards in the event of fire; 5. Hazardous Materials Management Program; 6. Fire Prevention Plan 7. An Operations Flood Safety Plan; and 8. Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401-3411). The Operation Injury and Illness Prevention Plan, Emergency Action Plan, Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment, an Operations Flood Safety Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Riverside County Fire Department for review and comment.	
WORKER SAFETY-3: The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall: 1. Have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs; 2. Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects; 3. Assure that all construction and commissioning workers and supervisors receive adequate safety training; 4. Complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and 5. Assure that all the plans identified in Conditions of Certification Worker Safety-1 and -2 are implemented. 6. The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include: 7. Record of all employees trained for that month (all records shall be kept on site for the duration of the project); 8. Summary report of safety management actions and safety-related incidents that occurred during the month; 9. Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and 10. Report of accidents and injuries that occurred during the month.	At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Worker Safety (cont.)	
WORKER SAFETY-4: The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification **Worker Safety-3**, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.	At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.
WORKER SAFETY-5: The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use. The training program shall be submitted to the CPM for review and approval.	At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) exists on site and a copy of the training and maintenance program for review and approval.
WORKER SAFETY-6 The project owner shall: a. Provide a second access gate for emergency personnel to enter the site. This secondary access gate shall be at least one-quarter mile from the main gate. b. Maintain the main access road and provide a plan for implementation. Plans for the secondary access gate, the method of gate operation, and to maintain the road shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.	At least sixty (60) days prior to the start of site mobilization, the project owner shall submit to the Riverside County Fire Department and the CPM preliminary plans showing the location of a second access gate to the site, a description of how the gate will be opened by the fire department, and a description and map showing the location, dimensions, and composition of the main road. At least thirty (30) days prior to the start of site mobilization, the project owner shall submit final plans plus the road maintenance plan to the CPM review and approval. The final plan submittal shall also include a letter containing comments from the Riverside County Fire Department or a statement that no comments were received.
WORKER SAFETY-7: The project owner shall fund its share of capital costs in the amount of $250,000 and provide an annual payment of $100,000 to the RCFD for the support of construction, operations and maintenance commencing with the start of site mobilization and continuing annually thereafter. All annual payments after the initial payment shall be subject to an annual escalator of 2% on the anniversary until the final date of power plant non-operation and facility closure.	Not less than fifteen (15) days after the start of site mobilization, the project owner shall provide to the CPM documentation that the amount of $250,000 has been paid to the RCFD, documentation that the first annual payment of $100,000 has been paid to the RCFD, and shall also provide evidence in each January Monthly Compliance Report during construction and the Annual Compliance Report during operation that subsequent annual payments plus the annual escalator have been made.
WORKER SAFETY-8: The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in **AQ-SC3** and additionally requires: i. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present; ii. Implementation of methods equivalent to Rule 402 of the Kern County Air Pollution Control District (as amended Nov. 3, 2004); and iii. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with **AQ-SC4**) immediately whenever visible dust persists in the breathing zone of the workers, or when PM10 measurements obtained when implementing ii (above) indicate an increase in PM10 concentrations due to project activities of 50 $\mu g/m^3$ or more.	At least 60 days prior to the commencement of site mobilization, the enhanced Dust control Plan shall be provided to the CPM for review and approval.

TABLE 2-6 (Continued)
PROPOSED DESIGN FEATURES FOR THE MODIFIED BLYTHE PROJECT

Design Feature	Verification
Worker Safety (cont.)	
WORKER SAFETY-9: The project owner shall submit to the Riverside County Fire Department (RCFD) all plans and schematic diagrams that show the details of all fire detection and suppression systems and shall pay the RCFD its usual and customary fee for the review of those plans and inspection of the site to ensure compliance with those plans. The project owner shall provide proof to the CPM that the plans have been submitted to the RCFD on a timely basis and a copy of the comments received from the RCFD.	In each Monthly Compliance Report during construction, the project owner shall include any and all comments received from the RCFD on fire detection and suppression systems and proof that the required plan review and inspection fees have been paid to the fire department. During operation, the project owner shall provide proof in the Annual Compliance Report that the required inspection fees have been paid to the fire department.
WORKER SAFETY-10: The project owner shall report to the CPM within 24 hours of any incidence of heat illness (heat stress, exhaustion, stroke, or prostration) occurring in any worker on-site and shall report to the CPM the incidence of any confirmed case of Valley Fever in any worker on the site within 24 hours of receipt of medical diagnosis.	The project owner shall provide reports of heat-related and Valley Fever incidences in any worker on the site via telephone call or e-mail to the CPM within 24 hours of a heat-related occurrence or confirmed diagnosis of a case of Valley Fever, and shall include such reports in the Monthly Compliance Report during construction and the Annual Compliance Report during operation.

References

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California Energy Commission (CEC) Staff, 2013. Attachment DR 21 Construction Workforce Schedule by Trade, Revision A. August 26. Available online: http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC-06C/TN200341_20130826T133917_Attachment_DR_21_Construction_Workforce_Schedule_by_Trade_Revis.pdf

NextEra Blythe Solar Energy Center, LLC (NextEra Blythe Solar), 2013a. Plan of Development Supplement, Blythe Solar Power Project, File # CACA – 048811. March 18.

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CHAPTER 3
Environmental Analysis

3.1 Introduction

This chapter assesses environmental consequences or impacts that would result from approval of the Modified Project (Alternative 1) and denial of the Modified Project (Alternative 2) described in Chapter 2, on resources, resource uses, special designations, and other important topics (including public health and safety, social and economic considerations, and environmental justice conditions).[1] "Resources" include air, soil, water, vegetative communities, wildlife, wildland fire ecology and management, as well as cultural, paleontological, and visual resources. "Resource uses" include lands and realty, mineral resources, recreation, transportation and travel management, and utilities and public services. "Special designations" include designations such as areas of critical environmental concern (ACECs) and wilderness areas.

For each resource area evaluated, this chapter documents the BLM's analysis of the direct, indirect, and cumulative effects that could occur under NEPA as a result of implementing each of the alternatives. It considers the impacts of short-term uses, such as construction and decommissioning-related truck traffic, and the impacts that would occur over the longer-term operation and maintenance period or that would persist after initial occurrence, such as removal of slow-growing vegetation or destruction of irretrievable or irreplaceable resources. It also identifies mitigation measures that could avoid or reduce adverse impacts, and summarizes the residual impacts on an issue-by-issue basis after the implementation of all proposed design features and mitigation measures.

3.1.1 Baseline

The baseline for purposes of this EIS is on or about August 30, 2013, which is the date the BLM published a Notice of Intent to prepare an EIS considering requested amendments to the BSPP ROW grant (CACA-048811) (78 Fed. Reg. 53778). The baseline is the environmental setting described in Sections 3.2 through 3.19 and is intended to reflect the environmental conditions against which the potential impacts of the alternatives are analyzed. Where baseline conditions have not changed substantially since the issuance of the 2010 PA/FEIS, the Draft EIS incorporates that document's descriptions of the baseline by reference.

[1] As described in Section 2.4, the Draft EIS also compares the effects of Alternatives 1 and 2 to those of the Approved Project and the No Project alternatives that were described and analyzed in 2010 PA/FEIS for informational purposes.

3.1.2 Types of Effects

The potential impacts from those actions that could have direct, indirect, and cumulative effects are considered for each resource. The terms "effects" and "impacts" as used in this document are synonymous and could be beneficial or detrimental.

CEQ regulations define direct effects as effects "…which are caused by the action and occur at the same time and place" and indirect effects as effects "…which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8(a)-(b)). "Because it can be difficult to distinguish between direct and indirect effects, [the BLM does] not have to differentiate the terms" and can describe the effects together (BLM NEPA Handbook §6.8.2). This document combines the discussion of direct and indirect effects. Chapter 3 also describes the residual effects of any adverse impacts that remain after mitigation measures have been applied (BLM NEPA Handbook §6.8.4).

CEQ regulations define a cumulative effect as "…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 CFR 1508.7). The scenario used for defining and analyzing cumulative impacts is discussed in Section 3.1.4, below.

3.1.3 Resources and Uses Not Affected or Present in the Action Area

Resources or BLM program areas that would not be affected by the alternatives because they are not present in the affected area include: national wild, scenic, and recreational rivers; national scenic, recreational, and historic trails; national monuments, recreation areas, and conservation areas; outstanding natural areas; lands with wilderness characteristics; forest reserves; back country byways; wetlands; livestock grazing; and wild horses and burros.

3.1.4 Cumulative Scenario

3.1.4.1 Approach to the Analysis of Cumulative Effects

This chapter analyzes cumulative impacts of the Modified Project (Alternative 1) and the No Action Alternative (Alternative 2), taking into account past, present, and reasonably foreseeable future actions that cause similar types of impacts as the Modified Project or Alternative 2 and that are related temporally and geographically (i.e., the impacts would occur at the same and within the same area as the alternatives described in Chapter 2). The cumulative effects analysis considers the impacts of past actions that have resulted in the current baseline; presents actions that are ongoing at the same time this EIS was being prepared; and reasonably foreseeable future actions, including those for which funding has been identified, formal proposals have been submitted, or which are highly probable based on known opportunities or trends.

For each resource or issue area, the geographic scope of analysis is based on the natural boundaries of the resource or issue affected, rather than on jurisdictional boundaries. The geographic scope of

cumulative effects may extend beyond the area where direct effects could occur, but not beyond the area where indirect effects of the Modified Project and Alternative 2 could occur.

Varying degrees of information exist about projects within the cumulative scenario. For resource areas for which quantitative information is available, a quantitative analysis is provided; however, if this level of detail is not available, then a qualitative analysis is provided. If the Modified Project or Alternative 2 would have no direct or indirect effects on a resource, then it could not cause or contribute to cumulative effects on that resource. See, for example, Section 3.9, Mineral Resources.

3.1.4.2 Cumulative Projects

Consistent with Sections 6.8.3.4 and 6.8.3.5 of the BLM NEPA Handbook, this Draft EIS considers the direct and indirect effects of each alternative together with the effects of the other actions (including other BLM, other federal, and non-federal actions) that could occur in the same geographic area and timeframe as the Modified Project or Alternative 2 and, thereby, cause a cumulative effect. For each resource or issue considered in this Chapter 3, the cumulative effects analysis identifies the relevant geographic area and time period within which cumulative effects could occur and then describes existing conditions (which are the combination of the natural condition and the effects of past actions) and the effects of other present and reasonably foreseeable future actions in combination with the effects of each alternative. Where relevant, the cumulative effects analysis also describes the relationship of the cumulative effects to any established thresholds. A quantitative analysis is provided where possible; where quantification is infeasible, qualitative effects are described.

The cumulative scenario for the Modified Project includes:

1. Past actions, the ongoing effects of which are reflected in the description of the affected environment. For example, past (existing) large-scale energy projects in the vicinity of the approved site include:

    a. Blythe Solar Power Generation Station 1, a 4.75 MW, 29.4-acre solar photovoltaic (PV) project located approximately 6.55 miles from the approved site (Riverside County Planning Department, 2010); and

    b. Blythe PV Project, a 21 MW, 200-acre solar PV project located near Blythe that began operations in December 2009.

2. Other present actions, including projects that are ongoing at the time of this analysis (e.g., have been approved by at least one agency, but are not yet in service. Some other present actions are identified in Table 3.1-1; additional present actions may be identified as appropriate to inform the analysis of cumulative impacts to particular resource areas.

3. Reasonably foreseeable future actions, including decisions on pending applications for 27 solar and 8 wind projects, which would produce a total of approximately 11,033 MW of renewable energy on 189,148 acres BLM California Desert District-administered lands (BLM, 2013a and 2013b). Some reasonably foreseeable future actions are identified in Table 3.1-2; additional future actions may be identified as appropriate to inform the analysis of cumulative impacts to particular resource areas.

Present and reasonably foreseeable actions listed in Tables 3.1-1 and 3.1-2 are shown in Figure 3.1-1 (with the exception of the Quartzsite Solar Energy Project, which is located in Arizona).

Large renewable projects now described in applications to the BLM and on private land are competing for utility Power Purchase Agreements (PPAs), which will allow utilities to meet state-required Renewables Portfolio Standard (RPS) targets. California's RPS requires retail electricity sellers regulated by the California Public Utilities Commission (CPUC) to procure 33 percent of retail sales per year from eligible renewable sources by 2020, and also requires that they achieve intermediate targets, one of which is to average 25 percent of retail sales from renewable sources from 2014 to 2016. As of late 2012, California's regulated utilities are anticipated to meet or exceed this intermediate target based on forecasted trends in renewable energy development. However, current forecasting does not indicate that utilities are "on track" to meet the 2020 goal. These conditions may result in a limited market for new renewable energy to come online through 2016, but an increased demand for new sources between 2016 and 2020. Despite being a small portion of the current portfolio, solar PV technology is forecasted to contribute 34 percent of the state's total renewable generation by 2020. (CPUC, 2013)

While a large number of projects are in the planning stages and are considered in this EIS to be reasonably foreseeable future development, fewer than all of these projects actually will be built as a result of various agencies' discretionary permitting processes, development funding constraints, and other limitations. Given the uncertain and challenging economic circumstances facing federal and state economies as well as private developers, it is not assured that future funding and other necessary support will be sufficiently available for all of the proposed projects to be realized within the anticipated schedules. By comparison, other actions and projects that are not now known could be proposed and developed during the lifetime of the Modified Project. To provide for an appropriately conservative analysis that accounts for such potential fluctuation, this EIS assumes that all of the projects identified as part of the cumulative scenario would be constructed.

3.1.5 Mitigation Measures Identified in the Analysis

Mitigation measures included in the Environmental and Construction Compliance Monitoring Plan (ECCMP) for the Approved Project are set forth in Appendix 4 of the 2010 ROD (see Appendix B). These measures are based on a variety of authorities, including Conditions of Certification imposed by the CEC as part of its licensing process and other sources identified in 2010 PA/FEIS Section 4.1.5 (Appendix A, p. 4.1-10). Based on the analysis in this EIS, proposed modifications to mitigation measures included in the approved ECCMP may be warranted. Proposed modifications to approved ECCMP measures are identified in the relevant resource analyses in Sections 3.2 through 3.19.

TABLE 3.1-1
PRESENT PROJECTS ALONG THE I-10 CORRIDOR

ID #	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
A	Genesis Solar Energy Project; CACA 48880	Approximately 14 miles from the approved site, north of I-10	NextEra	Approved/ Under Construction	1,950	250 MW solar trough project with a 6-mile natural gas pipeline and a 5.5-mile gen-tie line to the Blythe Energy Center to Julian Hinds Transmission Line, then travel east on shared transmission poles to the Colorado River Substation (NextEra, 2011). Began construction in December 2010, expected to be in operation by July 2014.
B	Desert Sunlight; CACA 48649	Approximately 29 miles from the approved site; north of Desert Center	Desert Sunlight Holdings, LLC (First Solar, GE, Sumitomo Corp, NextEra)	Approved/ Under Construction	4,144	550 MW solar PV project that will tie into the SCE Red Bluff Substation. Approximately 27 AF would be used during construction and 3.8 AFY during operation (First Solar, Inc., 2011). Began construction in September 2011, expected to be in operation by 2015 (First Solar, Inc., 2013).
C	Rice Solar Energy Project; CACA 051022	Approximately 27 miles from the approved site in the Rice Valley, Eastern Riverside County	Rice Solar Energy, LLC (Solar Reserve, LLC)	Approved/ Under Construction	1,410	150 MW solar power tower project with liquid salt storage. Includes a 650-foot power tower and a 10-mile-long interconnection to the WAPA Parker-Blythe transmission line.
D	McCoy Solar Energy Project; CACA 48811	Adjacent to and north of the approved site	McCoy Solar, LLC (NextEra)	Environmental review/ permitting. Approved by BLM in 2013; Riverside County Draft EIR published in July 2013, Final EIR anticipated in January 2014.	4,496	Up to 750 MW solar PV project on 4,019 acres of public land and 477 acres of private land.
E	Desert Harvest Project; CACA 04949, PUP00914	Approximately 37 miles from the approved site; 6 miles north of Desert Center	EDF Renewable Energy	Environmental review/ permitting. Approved by BLM in February 2013. Public Use Permit application submitted to Riverside County December 2011.	930	100 MW solar PV project would interconnect via a 5- to 8-mile transmission line to SCE's Red Bluff Substation.
F	Blythe Energy Project II	Within City of Blythe, approximately 6 miles from the approved site	Caithness Blythe II, LLC	Environmental review/ permitting. Approved by CEC in 2005. Amendment approved by CEC in April 2012.	76	520 MW combined-cycle natural gas-fired electric-generating facility.
G	Quartzsite Solar Energy; AZA-34666	Approximately 31 miles from the approved site; 10 miles north of Quartzsite, Arizona	Solar Reserve	Approved by BLM in 2013	1,500	100 MW solar power tower project. Facility would include 653-foot tower.

SOURCE: BLM, 2013a; City of Blythe, 2013.

TABLE 3.1-2
REASONABLY FORESEEABLE FUTURE PROJECTS ALONG THE I-10 CORRIDOR

ID #	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
H	Blythe Mesa Solar I; CUP 3685, PUP 913	Approximately 7.56 miles from the approved site, on private land in Blythe	Renewable Resources Group	Environmental review/permitting. RRG submitted applications to Riverside County for a CUP and PUP; an NOP was issued in November 2011. BLM EA for proposed gen-tie line pending.	3,660	485 MW PV solar project to be constructed on 3,660 acres. Project components would include a solar array, three substations, two operation and maintenance buildings, a new 8.4 mile long 230 kV double circuit gen-tie line and other related infrastructure. The project would interconnect with the CRS. (Riverside County Planning Department, 2011). A portion of the gen-tie line would be located on BLM-administered land.
I	Palen Solar Electric Generating System (formerly Palen Solar Energy Project); CACA 048810	Approximately 27.8 miles from the approved site, north of I-10, 10 miles east of Desert Center	Palen Solar Holdings, LLC	Environmental review/permitting of modified project in progress (BLM and CEC)	3,794	500 MW solar power tower project. Facility would consist of two 750-foot power towers, each with 250 MW output, disturbing an approximate total of 3,794 acres. Project would include interconnection to the SCE Red Bluff Substation.
J	Eagle Mountain Pumped Storage Project; FERC 13123-002	Approximately 44.15 miles from the approved site, at the Eagle Mountain iron ore mine, north of Desert Center.	Eagle Crest Energy Company	Environmental review/permitting. License application filed with FERC in June 2009. Draft EIS published in December 2010.	1,524	1,300 MW pumped storage project designed to store off-peak energy to use during peak hours. The captured off-peak energy would be used to pump water to an upper reservoir. When the water is released to a lower reservoir through an underground electrical generating facility the stored energy would be added into the Southwestern grid during “high demand peak” times, primarily weekdays. Estimated water use is 8,100 AFY for the first 4-year start-up period and replacement water is 1,763 AFY thereafter (Eagle Crest Energy Company, 2009).
K	Desert Center 50; CUP03680	Approximately 37.39 miles from the approved site, in Desert Center	US Solar Holdings	Environmental review/permitting. Under review by Riverside County.	453	49.5 MW solar PV project (Riverside County Planning Department, 2013)
L	McCoy Soleil; CACA 049490	Approximately 5.56 miles from the approved site, 10 miles northwest of Blythe	EDF Renewable Energy	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office.	1,959	300 MW solar PV project, which would require a 14-mile transmission line to SCE Colorado River Substation south of I-10.
M	enXco; CACA 049088	Approximately 1.028 miles from the approved site, north of Wiley’s Well	EDF Renewable Energy	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office.	Unknown	300 MW solar PV project.

TABLE 3.1-2 (Continued)
REASONABLY FORESEEABLE FUTURE PROJECTS ALONG THE I-10 CORRIDOR

ID #	Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
N	Desert Lily Soleil; CACA 049492	Approximately 32.15 miles from the approved site, 6 miles north of Desert Center	EDF Renewable Energy	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office.	1,216	100 MW solar PV project
O	Big Maria Vista Solar Project; CACA 049702	Approximately 9.7 mil es from the approved site, 12 miles northwest of Blythe	Bullfrog Green Energy	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office.	2,684	500 MW solar PV project
P	Chuckwalla Solar I; CACA 048808	Approximately 33.15 miles from the approved site, 1 mile north of Desert Center	Chuckwalla Solar I, LLC	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office September 2006.	4,082	200 MW solar PV project would interconnect into an existing SCE 161-kV transmission line crossing the site.
Q	Mule Mountain Solar Project; CACA 049097	Approximately 11.08 miles from the approved site, 4 miles west of Blythe	Bullfrog Green Energy	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office	2,684	500 MW solar PV project
R	Desert Quartzite; CACA 049397	Approximately 7.49 miles from the approved site; south of I-10, 8 miles southwest of Blythe	First Solar	Proposed: POD submitted to the BLM Palm Springs-South Coast Field Office	7,245	600 MW solar PV project located adjacent to DPV transmission line and SCE Colorado River Substation. Approximately 27 AF of water would be used during construction and 3.8 AFY during operation.

3.1.6 Terms and Conditions found in FLPMA and BLM ROW Regulations

Section 4.1.6 of the 2010 PA/FEIS (Appendix A, p. 4.1-19 et seq.) describes the basis for the general and project-specific terms and conditions included in the approved ROW grant. Based on the analysis in this EIS, modifications to these approved terms and conditions may be warranted, and the approved ROW grant may be amended accordingly in connection with the BLM's review of the Level 3 variance. The BLM also will continue to monitor compliance to evaluate whether future changes to the grant terms and conditions are necessary or justified.

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3.2 Air Resources

This section describes and evaluates potential impacts to air resources for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are relied on to the extent practicable in this Draft EIS, and the environmental and regulatory settings for the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures.

The BLM received several scoping comments regarding air resources (see Appendix D). Basin and Range Watch requested that the Draft EIS analyze impacts to human health caused by airborne particulates from construction dust and indicated that dust mitigation for the Approved Project access roads is inadequate. Defenders of Wildlife et al. expressed concern over air quality impacts due to the disturbance of stabilized soils. In addition, the U.S. Environmental Protection Agency (USEPA) requested that the Draft EIS: provide a detailed discussion of existing conditions and regulatory standards for air quality; provide a quantitative estimate of criteria pollutant emissions from the project and mitigation measures; present emission sources by pollutant (e.g., mobile sources, stationary sources, or ground disturbance) to identify appropriate mitigation; and provide and analyze the effects of a draft construction emissions mitigation plan that includes fugitive dust source controls, mobile and stationary source controls, and administrative controls. All of the issues raised during scoping are addressed in Sections 3.2.3 and 3.2.5, and Appendix A, Sections 3.2 and 4.2.

3.2.1 Environmental Setting

Section 3.2 of the 2010 PA/FEIS (Appendix A, p. 3.2-1 et seq.) describes air quality conditions for criteria pollutants and the federal and state ambient air quality standards. For purposes of analyzing air quality impacts of the Modified Project and Alternative 2, the study area would be the same as that evaluated in the 2010 PA/FEIS. The topographic and climatic conditions and air quality attainment designation status of the study area have not changed. This analysis of the Modified Project and Alternative 2 tiers to and relies on those discussions, and updates others to describe the nearest federal Class I air quality protection area, changes to federal ambient air quality standards (AAQS) that have occurred, and updated ambient air quality monitoring data that have become available since publication of the 2010 PA/FEIS.

3.2.1.1 Federal Class I Air Quality Protection Areas

With regard to the proximity of the Modified Project and Alternative 2 to federal sensitive air quality protection areas, the project area is approximately 30 miles east-southeast of the nearest Federal Class I air quality protection area, which is Joshua Tree National Park (USEPA, 2012).

3.2.1.2 Federal Ambient Air Quality Standards

On June 2, 2010, a new 1-hour sulfur dioxide (SO_2) federal standard was established and the existing 24-hour and annual primary standards were revoked. To attain the new 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.075 parts per million (ppm). On December 14, 2012, the federal annual fine particulate matter (PM2.5) primary standard was lowered from 15 micrograms per cubic meter ($\mu g/m^3$) to 12.0 $\mu g/m^3$. The national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The annual primary and secondary standards are annual means, averaged over 3 years. The new federal SO_2 and PM2.5 air quality standards are listed in Table 3.2-1.

TABLE 3.2-1
NEW FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Standard
Sulfur Dioxide (SO_2)	1 Hour	0.075 ppm (196 $\mu g/m^3$)
Fine Particulate Matter (PM2.5)	Annual	12.0 $\mu g/m^3$

SOURCE: CARB, 2013a.

3.2.1.3 Ambient Air Quality

Updated ambient air quality monitoring data for ozone, particulate matter (PM10), PM2.5, carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are presented in Table 3.2-2. The data are from the most representative monitoring stations for the years 2009 through 2012 and are compared to the most restrictive applicable standards. Ozone data are from the Blythe-445 West Murphy Street monitoring station, PM10, PM2.5, NO_2; CO data are from the Palm Springs Fire Station monitoring station; and SO_2 data are from the Victorville-14306 Park Avenue monitoring station.

As indicated in Table 3.2-2, the state 8-hour ozone standard was exceeded in 2012, the state 24-hour PM10 standard was exceeded in 2009, and the state annual PM10 standard was exceeded in 2011. There were no other exceedances of standards at the representative monitoring stations during the 4-year period.

3.2.2 Applicable Laws, Regulations, Plans, and Standards

General and air resource-specific laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (see Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and Alternative 2 tiers to and relies on those summaries.

TABLE 3.2-2
CRITERIA POLLUTANT SUMMARY MAXIMUM AMBIENT CONCENTRATIONS

Pollutant	Averaging Period	Units	2009	2010	2011	2012	Limiting AAQS[c]
Ozone	1 hour	ppm	0.07	0.07	0.07	0.08	0.09
Ozone	8 hours	ppm	0.07	0.07	0.07	0.08	0.07
PM10[a,b]	24 hours	$\mu g/m^3$	140	37	42	37	50
PM10[b]	Annual	$\mu g/m^3$	20	19	22	20	20
PM2.5[a]	24 hours	$\mu g/m^3$	22	13	26	16	35
PM2.5[a]	Annual	$\mu g/m^3$	7	6	6	6	12
CO	1 hour	ppm	2	2	3	1	20
CO	8 hours	ppm	0.7	0.5	0.6	0.5	9.0
NO_2	1 hour	ppm	0.05	0.05	0.05	0.05	0.18
NO_2	Annual	ppm	0.01	0.01	0.01	0.01	0.03
SO_2	1 hour	ppm	0.008	0.052	0.013	0.006	0.075
SO_2	24 hours	ppm	0.01	0.01	0.01	0.00	0.04

NOTES:
[a] Data do not include exceptional PM10 concentration events, such as those caused by wind storms.
[b] The PM_{10} data source is in the Coachella Valley that is classified as a serious PM10 nonattainment area.
[c] The limiting AAQS is the most stringent of the California or National AAQS for that pollutant and averaging period.

SOURCE: CARB, 2013b, USEPA, 2013

3.2.3 Analytical Methodology

The analysis of the Modified Project's impacts on air resources is based on technical information prepared by AECOM for the Grant Holder (AECOM, 2013) that was independently reviewed by the BLM's environmental consultant and BLM staff. The AECOM report identified and quantified the emission sources of criteria air pollutants, toxic air contaminants (TACs), and greenhouse gases (GHGs)[1] that would be associated with the Modified Project. Emission calculations in the AECOM report are based on specific equipment and construction material throughput data provided by the Grant Holder, as well as emission factors from the following sources:

1. California Air Resources Board (CARB)'s OFFROAD2007 model for off-road vehicles and equipment;
2. CARB's EMFAC2011 model for on-road vehicles; and
3. USEPA's *AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition*.

As noted, the assumptions, emission factors, calculations, and other data in the AECOM report were independently reviewed by the EIS authors and were determined to be acceptable for incorporation in this analysis.

[1] GHGs are discussed, and potential related impacts are analyzed, in Section 3.5, Climate Change.

3.2.3.1 Construction Emissions

Construction emissions were estimated using specific information about the Modified Project provided by the Grant Holder. The overall construction schedule would occur over a period of 48 months, with activities divided into five separate phases of construction. For the purposes of this air quality analysis, construction is assumed to begin in June 2014, and would be completed in May 2018. Average daily off-road equipment and on-road motor vehicle construction emissions for the Modified Project were estimated for each month from June 2014 through May 2018, and annual emissions were estimated by summing the estimated monthly totals for a given year. The air quality technical report (AECOM, 2013) is the primary source of assumptions used to estimate the construction emissions that would be associated with the Modified Project. For the purposes of the air resources analysis, it is assumed that the Modified Project would be constructed in the following five broad phases: Phase 1 - Mobilization; Phase 2 - Civil Improvements; Phase 3 - Photovoltaic Panel Construction; Phase 4 - Building and Water Tank Construction; and Phase 5 - System Testing and Commissioning. For each of these phases, the following assumptions were established based on the size and nature of the Modified Project:

1. A list of the types of construction equipment and vehicles to be used;
2. The number of pieces of each type of equipment and vehicle;
3. Daily usage rates in terms of hours per day and miles per day for each piece of equipment vehicle, respectively; and
4. The power rating for each type of equipment used.

Off-Road Equipment Exhaust

Criteria pollutant and precursor emissions, including CO, reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur oxides (SO_x), PM10, and PM2.5, from off-road construction equipment use were estimated using emission factors for calendar year 2014 from CARB's OFFROAD2007 model and estimates of construction equipment types, horsepower, and daily operating hours provided by the Grant Holder. Equipment emission factors were used for the earliest model year required to meet at least USEPA Tier 3 emission standards; therefore, the off-road equipment emission estimates represent emissions from engines that meet a minimum of USEPA Tier 3 emission standards. Details of the calculations and model input and output are provided in the air quality technical report (AECOM, 2013). It should be noted that the AECOM emission estimates include no construction-related emissions that would be associated with the proposed fuel depot. However, as stated in Chapter 2, the Modified Project includes no changes to the approved fuel depot; therefore, construction emissions from this source has been carried forward from the air quality analysis conducted for the Approved Project and is considered also to be representative of the Modified Project (see Appendix A p. 4.2-5).

On-Road Motor Vehicle Exhaust Emissions

Fuel combustion in motor vehicle engines generates CO, ROG, NO_x, SO_x, PM10, and PM2.5 emissions. In addition, motor vehicle brake and tire wear results in the generation of PM10 and PM2.5 emissions. Emissions from motor vehicles that would be used during construction were

calculated by multiplying the vehicle miles traveled (VMT) for each vehicle type estimated to be used during the construction phase by emission factors for those vehicle types compiled running the EMFAC2011 (version 2.3) model for Riverside County during calendar year 2014. Daily emissions by vehicle class (e.g., light-duty trucks, heavy duty trucks, heavy-heavy duty diesel vehicle) from the EMFAC2011 model were divided by the estimated daily mileage traveled by the vehicles to calculate the associated emission factors. In addition to exhaust, the PM10 emission factors account for brake and tire wear emissions.

Monthly emissions were calculated by multiplying the monthly VMT by the EMFAC2011 vehicle emission factors. Emissions from both on-site and off-site vehicles were estimated. Monthly VMT amounts are based on data provided by the Grant Holder, and include the number of motor vehicles to be operated each day for each phase of construction, the daily round-trip distance travelled by each vehicle, and the assumption that there would be an average of 22 working days per month.

Fugitive Dust Emissions

On-Site Construction Activities

Earth-disturbing activities such as excavation, filling, grading, and vehicle travel during construction of the Modified Project would generate fugitive dust emissions, including emissions of PM10 and PM2.5. Maximum daily fugitive PM10 and PM2.5 emissions generated at the Modified Project site during construction were modeled using USEPA and Mojave Desert Air Quality Management District (MDAQMD) emission factors. USEPA emission factors were used to estimate fugitive dust generated by soil handling. MDAQMD emission factors were used to estimate fugitive dust generated by storage pile wind erosion and by bulldozing, scraping, and grading. The AECOM emissions estimates for the Modified Project assume implementation of standard dust control measures including, application of water to unpaved roads and exposed and stockpiled soils two times per day, use of enclosures and minimum freeboard on material haul trucks, and limiting vehicle speeds on unpaved roadways (AECOM, 2013).

Off-Site Construction Activities

With regard to off-site fugitive dust construction emissions, the AECOM emission estimates also include a fugitive dust calculation for off-site travel on paved and unpaved roads using USEPA methodology identified in its AP-42 document. The total on-road miles that would be travelled on paved and unpaved surfaces for each round trip was multiplied by the AP-42 predictive emission factors with appropriate variables as identified in AP-42 Section 13.2.1, Paved Roads and Section 13.2.2, Unpaved Roads.

Public Health Risk

The primary hazardous air pollutant emission associated with the Modified Project would be diesel particulate matter (DPM) emissions from construction equipment. Small quantities of other hazardous air pollutants would be associated with gasoline-fueled vehicles also operating on-site during construction. A screening level health risk assessment (HRA) for the Modified Project was conducted that focused on construction-related DPM emissions. The HRA was conducted using air toxic hot spots risk assessment guidelines developed by the California Office of Environmental

Health Hazard Assessment with worst case assumptions of child exposure from up to two years old (AECOM, 2013). HRA risks were estimated for the maximum individual risk and for the closest residence. The significance threshold for cancer risks used in the analysis is 10 in one million (MDAQMD, 2011).

3.2.3.2 Operation and Maintenance Emissions

Operation and maintenance emissions associated with the Modified Project would be generated by on-site equipment and on-site and off-site vehicle use. Operation and maintenance emissions were estimated using specific information for the Modified Project provided by the Grant Holder. Operation of the Modified Project is assumed to begin in 2018 (AECOM, 2012).

The AECOM operation and maintenance emission estimates from stationary sources are limited to emissions from the use of a single 35 hp portable generator to power lights during operations. These emissions were estimated using emission factors from CARB's OFFROAD2007 model and estimates of daily operating hours. However, as stated in Chapter 2, the Modified Project includes no substantive changes to the approved fire protection systems and controls, or to the fuel depot; therefore, operation and maintenance emissions from these sources have been carried forward from the air quality analysis conducted for the Approved Project and are considered to also be representative of the Modified Project (see Appendix A, pp. 4.2-7 and 4.2-8). Emissions from on-road motor vehicle use were calculated by multiplying the VMT for each type of vehicle estimated to be used during operation and maintenance by emission factors for those vehicles that were compiled running CARB's EMFAC2011 (version 2.3) model for Riverside County during calendar year 2018. In addition to exhaust emissions, the PM10 and PM2.5 emission factors account for brake and tire wear.

3.2.3.3 Decommissioning Emission Estimates

Air pollutant emissions that would result from decommissioning of the Modified Project are assumed to be similar to the construction-related emissions that would be generated by the Approved Project.

3.2.3.4 Impact Analysis

Independent of NEPA, federal Clean Air Act (CAA) Section 176 requires federal agencies that are funding, permitting, or approving an activity to ensure the activity conforms to the applicable State Implementation Plan adopted to eliminate or reduce air quality violations (42 USC §7506). However, the study area has no nonattainment or maintenance designations for any federal AAQS. Consequently, formal CAA conformity requirements do not apply to federal agency actions related to the Modified Project or Alternative 2. However, for the purposes of this analysis, the CAA conformity *de minimis* levels are used as mass emissions indicators for adverse annual average emissions. The CAA conformity thresholds for maintenance areas (i.e., areas that currently meet federal air quality standards, but have violated the standards in prior years), which in the Modified Project area are 100 tons per year per pollutant, are used in this analysis as a gauge of the potential for the Modified Project and Alternative 2 to result in an exceedance of a federal AAQS.

Although air dispersion modeling to estimate criteria pollutant concentrations has not been conducted for the Modified Project, it was conducted for the Approved Project to determine whether the Approved Project had the potential to contribute to an exceedance of an AAQS. When added to conservatively estimated ambient air quality concentrations, the pollutant concentrations estimated for the Approved Project were found to be below AAQSs and would not create new exceedances or contribute to existing exceedances for any of the modeled air pollutants with the exception of PM10 (see Appendix A, pp. 4.2-4 and 4.2-9). This analysis considers the emissions concentrations that were estimated for the Approved Project relative to the differences between the maximum mass emissions estimates for the Modified Project compared to the Approved Project as the basis to determine whether the Modified Project could contribute to an exceedance of a state AAQS.

3.2.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to air resources:

AQ-SC1, Air Quality Construction Mitigation Manager (AQCMM), includes a requirement to designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with DFs AQ SC3, AQ-SC4 and AQ-SC5.

AQ-SC2, Air Quality Construction Mitigation Plan (AQCMP), includes a requirement to provide an AQCMP which details the steps that will be taken and the reporting requirements necessary to ensure compliance with DFs AQ-SC3, AQ-SC4, and AQ-SC5.

AQ-SC3, Construction Fugitive Dust Control, requires that the Grant Holder demonstrate compliance with the AQCMP mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in AQ-SC4 from leaving the project site.

AQ-SC4, Dust Plume Response Requirement, requires that the AQCMM implement additional mitigation measures if visible dust plumes occur which may be transported off the project site.

AQ-SC5, Diesel-Fueled Engine Control, requires that the AQCMM's monthly reports demonstrate compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions.

AQ-SC6 requires that the Grant Holder obtain vehicles that meet California on-road vehicle emission standards or appropriate USEPA/California off-road engine emission standards for the latest model year available.

AQ-SC7 requires that the project owner provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the verification of AQ-SC3.

3.2.5 Environmental Consequences

3.2.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Criteria Pollutant Construction and Decommissioning Emissions

The maximum annual and maximum daily criteria pollutant emissions that would be generated within the MDAB during the Modified Project's 4 years of construction have been estimated using the methodologies described above. Tables 3.2-3 and 3.2-4 present the maximum annual and maximum daily construction emissions, respectively, that would be associated with the Modified Project. As shown in Table 3.2-3, the annual emissions for all pollutants would be below the respective *de minimis* levels (i.e., 100 tons per year). Using the *de minimis* levels as a gauge, it can be concluded that construction of the Modified Project would not result in or contribute to an exceedance of a federal AAQS (also see discussion below regarding PM10 construction and background emission concentrations). Maximum annual and daily construction emissions of CO, ROG, NO_x, SO_x, and PM2.5 associated with the Modified Project would be approximately 28 to 38 percent of the emissions estimated for the Approved Project. Therefore, construction emission concentrations associated with these pollutants would be substantially less than those estimated to be generated under the Approved Project and, consistent with the findings relative to the Approved Project, the Modified Project would not create new exceedances or contribute to existing exceedances relative to any of these pollutants.

TABLE 3.2-3
MODIFIED PROJECT CONSTRUCTION – MAXIMUM ANNUAL EMISSIONS (tons/year)

Emission Sources	CO	ROG	NOx	SOx	PM10	PM2.5
On-site Construction Emissions						
Construction Equipment Exhaust	5.6	1.5	12.4	0.0	0.4	0.5
Vehicle Exhaust	0.1	0.0	1.0	0.0	0.0	0.0
Asphaltic Paving	--	0.0	--	--	--	--
Fugitive Dust from Motor Vehicles	--	--	--	--	60.5	5.9
Fugitive Dust from Earthwork	--	--	--	--	8.6	2.8
Fuel Depot*	--	0.6	--	--	--	--
Subtotal – On-site Emissions	***5.7***	***2.1***	***13.4***	***0***	***69.5***	***9.2***
Off-site Construction Emissions						
Vehicle Exhaust	31.7	4.3	39.7	0.1	0.9	0.9
Vehicle Fugitive Dust	--	--	--	--	1.9	0.6
Subtotal – Off-site Emissions	***31.7***	***4.3***	***39.7***	***0.1***	***2.8***	***1.5***
Total Emissions	**37.4**	**6.4**	**53.1**	**0.1**	**72.3**	**10.7**
Percent Total Emissions compared to the Approved Project	**36%**	**37%**	**37%**	**32%**	**61%**	**38%**

NOTE: Emissions associated with fuel depot construction were estimated for the Approved Project (see Appendix A, p. 4.2-5), but are presented here as also applicable to the Modified Project.

SOURCES: AECOM, 2013; Appendix A, p. 4.2-5.

TABLE 3.2-4
MODIFIED PROJECT CONSTRUCTION – MAXIMUM DAILY EMISSIONS (lbs/day)

Emission Sources	CO	ROG	NOx	SOx	PM10	PM2.5
On-site Construction Emissions						
Construction Equipment Exhaust	53.7	14.3	113.8	0.2	4.4	4.0
Vehicle Exhaust	1.2	0.3	8.7	0.0	0.3	0.3
Asphaltic Paving	--	0.3	--	--	--	--
Fugitive Dust from Motor Vehicles	--	--	--	--	598.5	59.9
Fugitive Dust from Earthwork	--	--	--	--	75.9	23.1
Fuel Depot*	--	*3.5*	--	--	--	--
Subtotal – On-site Emissions	***54.9***	***18.4***	***122.5***	***0.2***	***679.1***	***87.3***
Off-site Construction Emissions						
Vehicle Exhaust	304.2	40.4	333.3	0.7	7.9	7.3
Vehicle Fugitive Dust	--	--	--	--	17.3	5.3
Subtotal – Off-site Emissions	***304.2***	***40.4***	***333.3***	***0.7***	***25.2***	***12.6***
Total Emissions	**359.1**	**58.8**	**455.8**	**0.9**	**704.3**	**99.9**
Percent Total Emissions compared to the Approved Project	**36%**	**35%**	**32%**	**28%**	**61%**	**35%**

NOTE: Emissions associated with fuel depot construction were estimated for the Approved Project (see Appendix A, p. 4.2-5), but are presented here as also applicable to the Modified Project.

SOURCES: AECOM, 2013, Appendix A, p. 4.2-5.

As indicated in Tables 3.2-3 and 3.2-4, the maximum annual and daily emissions of PM10 that would be associated with construction of the Modified Project would be approximately 61 percent of the PM10 construction emissions estimated for the Approved Project. However, given the relatively high ambient concentrations of PM10 in the study area (i.e., 24-hour average of up to 140 $\mu g/m^3$ and annual average of up to 22 $\mu g/m^3$), the Modified Project could create new exceedances or contribute to existing exceedances of PM10 AAQSs. Table 3.2-5 presents an estimate of the maximum PM10 concentrations that would be associated with construction of the Modified Project, which are estimated to be approximately 61 percent of those disclosed for the Approved Project (see Appendix A, p. 4.2-4). Although the Modified Project would result in lower PM10 concentrations then the Approved Project, the maximum background concentrations alone exceed the state PM10 AAQSs, and when the estimated Modified Project emissions are combined with the background concentrations, the concentrations would exceed the 24-hour PM10 federal AAQS of 150 $\mu g/m^3$.

TABLE 3.2-5
MODIFIED PROJECT MAXIMUM CONSTRUCTION EMISSION CONCENTRATIONS

Pollutants	Avg. Period	Modified Project ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Percent of Standard
PM10	24	26.2	140	166	50	332
	Annual	2.4	22	24	20	120

SOURCE: Based on Appendix A, p. 4.2-4.

It should be noted that the background concentration of 140 $\mu g/m^3$ is based on a single-day exceedance and the next highest PM10 24-hour average that occurred during 2009 through 2012 was 42$\mu g/m^3$. With a background PM10 24-hour concentration of 42 $\mu g/m^3$ added to the Modified Project PM10 24-hour concentration of 26 $\mu g/m^3$, the total concentration would exceed the state AAQS, but not the federal AAQS. In addition, the conditions that would create worst-case modeled impacts (i.e., low wind speeds) are not the same conditions when worst-case background concentrations would be expected for PM10. Additionally, the worst-case PM10 impacts would occur at the fence line and would rapidly decrease with distance. Therefore, PM10 concentrations associated with the Modified Project would not be expected to contribute substantially to exceedances of PM10 AAQSs in downwind areas.

Public Health Risk

A HRA was conducted to evaluate inhalation risks associated with emissions produced during construction of the Modified Project. This analysis focused on DPM, which represents the primary TAC of concern from construction activities. The California Office of Environmental Health Hazard Assessment (OEHHA) has identified DPM as a carcinogenic pollutant (OEHHA, 2013). The HRA considered only on-site DPM emissions and assumed a 48-month exposure period based on the estimated construction period for the Modified Project. Health risks were estimated for two receptor locations, including: 1) the maximally impacted receptor (MIR); and 2) the closest residence. The analysis assumed as a worst case scenario that a child under 2 years old would be exposed to DPM emissions at the two receptor locations. The HRA found that for both receptor locations, the cancer risks were substantially below the 10 in one million threshold recommended by California air districts, including the MDAQMD (AECOM, 2013; OEHHA, 2012; MDAQMD, 2011).

Criteria Pollutant Operation and Maintenance Emissions

The maximum annual and maximum daily criteria pollutant emissions that would be generated within the MDAB during operation and maintenance of the Modified Project have been estimated using the methodologies described above. Tables 3.2-6 and 3.2-7 present the maximum annual and maximum daily operation and maintenance emissions that would be associated with the Modified Project. As shown in Table 3.2-6, the annual emissions for all pollutants would be well below the respective *de minimis* levels (i.e., 100 tons per year). Using the *de minimis* levels as a gauge, it can be concluded that the Modified Project would not result in or contribute to an exceedance of a federal AAQS. Maximum annual and daily operation and maintenance emissions of CO, ROG, NO_x, SO_x, and PM2.5 associated with the Modified Project would be approximately 1 to 8 percent of the emissions estimated for the Approved Project. Therefore, operation and maintenance emissions concentrations associated with these pollutants would be substantially less than those estimated to be generated under the Approved Project and, consistent with the findings relative to the Approved Project, the operation and maintenance of the Modified Project would not create new exceedances or contribute to existing exceedances relative to any of these pollutants.

As indicated in Tables 3.2-6 and 3.2-7, the maximum annual and daily emissions of PM10 that would be associated with operation and maintenance of the Modified Project would be

TABLE 3.2-6
MODIFIED PROJECT OPERATION - MAXIMUM DAILY EMISSIONS (tons/year)

Emission Sources	CO	ROG	NOx	SOx	PM10	PM2.5
On-site Operation and Maintenance Emissions						
Portable Generator for Lights	0.04	0.00	0.05	0.00	0.00	0.00
Emergency Fire Pump Engines*	0.17	0.01	0.19	0.00	0.01	0.01
Vehicle Exhaust	0.01	0	0.01	0.00	0.00	0.00
Vehicle Fugitive Dust	--	--	--	--	6.66	0.67
Fuel Depot*	--	0.09	--	--	--	--
Subtotal – On-site Emissions	***0.22***	***0.1***	***0.25***	***0.00***	***6.67***	***0.68***
Off-site Construction Emissions						
Vehicle Exhaust	0.87	0.11	0.11	0.00	0.00	0.00
Vehicle Fugitive Dust	--	--	--	--	0.06	0.02
Subtotal – Off-site Emissions	***0.87***	***0.11***	***0.11***	***0.00***	***0.06***	***0.02***
Total Emissions	**1.09**	**0.21**	**0.36**	**0.00**	**6.73**	**0.7**
Percent Total Emissions compared to the Approved Project	**7%**	**1%**	**5%**	**3%**	**9%**	**7%**

NOTE: Emissions associated with the operation of the emergency fire pump engines and the fuel depot were estimated for the Approved Project (see Appendix A, pp. 4.2-7 and 4.2-8), but are presented here as also applicable to the Modified Project.

SOURCES: AECOM, 2013; Appendix A, pp. 4.2-7 and 4.2-8.

TABLE 3.2-7
MODIFIED PROJECT OPERATION - MAXIMUM DAILY EMISSIONS (pounds/day)

Emission Sources	CO	ROG	NOx	SOx	PM10	PM2.5
On-site Operation and Maintenance Emissions						
Portable Generator for Lights	0.73	0.05	1.03	0.00	0.03	0.03
Emergency Fire Pump Engines*	6.87	0.40	7.53	0.01	0.40	0.40
Vehicle Exhaust	0.04	0.01	0.07	0.00	0.00	0.00
Vehicle Fugitive Dust	--	--	--	--	48.56	4.86
Fuel Depot*	--	0.48	--	--	--	--
Subtotal – On-site Emissions	***7.64***	***0.94***	***8.63***	***0.01***	***48.99***	***5.29***
Off-site Construction Emissions						
Vehicle Exhaust	7.04	0.92	2.16	0.01	0.05	0.04
Vehicle Fugitive Dust	--	--	--	--	0.54	0.17
Subtotal – Off-site Emissions	***7.04***	***0.92***	***2.16***	***0.01***	***0.59***	***0.21***
Total Emissions	**14.68**	**1.86**	**10.79**	**0.02**	**49.58**	**5.5**
Percent Total Emissions compared to the Approved Project	**8%**	**1%**	**7%**	**3%**	**6%**	**5%**

NOTE: Emissions associated with the operation of the emergency fire pump engines and the fuel depot were estimated for the Approved Project (see Appendix A, pp. 4.2-7 and 4.2-8), but are presented here as also applicable to the Modified Project.

SOURCES: AECOM, 2013; Appendix A, pp. 4.2-7 and 4.2-8.

approximately 6 percent of the PM10 construction emissions estimated for the Approved Project. However, given the relatively high ambient concentrations of PM10 in the study area (i.e., 24-hour average of up to 140 μg/m^3 and annual average of up to 22 μg/m^3), the Modified Project could create new exceedances or contribute to existing exceedances relative to PM10. Table 3.2-8 presents an estimate of the maximum PM10 concentrations for operation and maintenance of the Modified Project, which are estimated to be approximately 9 and 6 percent of the annual and daily emissions, respectively, disclosed for the Approved Project (see Appendix A, pp. 4.2-7 and 4.2-8). Although the Modified Project would result in substantially lower PM10 concentrations during operation and maintenance compared to the Approved Project, the maximum background concentrations alone exceed the state PM10 AAQSs. When the estimated Modified Project long-term emissions are combined with the background concentrations, the concentrations would not exceed the PM10 federal 24-hour AAQS of 150 μg/m^3.

TABLE 3.2-8
MODIFIED PROJECT MAXIMUM OPERATION AND MAINTENANCE CONCENTRATIONS

Pollutants	Avg. Period	Modified Project (μg/m^3)	Background (μg/m^3)	Total Concentration (μg/m^3)	State Standard (μg/m^3)	Percent of Standard
PM10	24	1.3	140	141	50	282
	Annual	0.2	22	22	20	110

SOURCE: Based on Appendix A, p. 4.2-7.

As stated above, the worst-case PM10 impacts would occur at the fence line and would decrease quickly with distance. Therefore, PM10 concentrations associated with the Modified Project would not be expected to contribute substantially to exceedances of PM10 AAQSs in downwind areas.

Federal Class I Air Quality Protection Areas

The Modified Project site is approximately 30 miles east-southeast of the nearest Federal Class I air quality protection area, which is Joshua Tree National Park (USEPA, 2012). Given the Modified Project site's proximity to Joshua Tree National Park and the fact that the prevailing winds in the MDAB are from the west and southwest, emissions that would be associated with the Modified Project or Alternative 2 would not be expected to affect air quality at Joshua Tree National Park.

3.2.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

Under Alternative 2, a project using solar thermal parabolic trough technology could be developed at the site at a scale approximately 65 percent of the Approved Project. It is assumed that a solar power plant under this Alternative would incorporate the same construction techniques and methods that would have occurred under the Approved Project; however, instead of lasting for 69 months, construction under Alternative 2 would last for approximately 45 months. Therefore, maximum

annual and daily construction emissions that would be associated with Alternative 2 would be expected to be similar to those disclosed for the Approved Project and could result in an exceedance of the AAQSs for PM10 (Appendix A, p. 4.2-4). With regard to long-term operation and maintenance of a solar plant under Alternative 2, it is assumed that long-term annual and daily emissions would be approximately 65 percent of those estimated for the Approved Project. Table 3.2-9 presents an estimate of the maximum PM10 emissions concentrations for operation and maintenance of Alternative 2, which are estimated to be approximately 65 percent of the emissions disclosed for the Approved Project (see Appendix A, p. 4.2-7). When the estimated emissions for Alternative 2 are combined with the background concentrations, the concentrations would exceed the PM10 federal 24-hour AAQS of 150 $\mu g/m^3$ and the state annual AAQS of 20 $\mu g/m^3$.

TABLE 3.2-9
ALTERNATIVE 2 MAXIMUM OPERATION AND MAINTENANCE CONCENTRATIONS

Pollutants	Avg. Period	Modified Project ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Percent of Standard
PM10	24	14.5	140	155	50	310
	Annual	1.8	22	24	20	120

SOURCE: Based on Appendix A, p. 4.2-7.

3.2.5.3 Cumulative Effects

With regard to cumulative effects on sensitive receptors, the geographic scope includes any past, present, or reasonably foreseeable future actions located within 1,000 feet of a sensitive receptor that also is located within 1,000 feet of the Modified Project or Alternative 2. None of the existing/approved or reasonably foreseeable projects identified in Tables 3.1-1 or 3.1-2 fit within this geographic scope; therefore, neither the Modified Project nor Alternative 2 would contribute to an adverse cumulative effect relative to exposing sensitive receptors to air pollutants.

The geographic scope considered for potential cumulative impacts to regional air resources is the MDAB. The temporal scope considered for potential cumulative impacts to regional air resources is from the start of construction, through the end of the 30-year term of the ROW grant. If the Modified Project or Alternative 2 would result in an increase in a criteria pollutant that has an existing adverse cumulative effect (i.e., the MDAB is classified as non-attainment of the criteria pollutant) and the increase would result in an exceedance of an AAQS, when combined with the emissions associated with other past, present, or reasonably foreseeable future actions, it would be considered to contribute to a significant cumulative effect to regional air resources.

As disclosed in Section 3.2 of the 2010 PA/FEIS (Appendix A, p. 3.2-1 et seq.), the study area currently is designated as a non-attainment area for the state ozone standards and the state PM10 24-hour standard. In addition, the federal 24-hour PM10 AAQS was recently exceeded in 2009. These non-attainment designations are a result of poor air quality due to emissions associated with existing conditions in the MDAB, which include emissions associated with present federal actions. The study area is designated as attainment for all other federal and state AAQSs,

including the state and federal CO, PM2.5, and SO_2 AAQSs. As indicated in Table 3.2-2, existing CO, PM, and SO_2 concentrations in the area are well below the state and federal AAQSs, making the potential for future non-attainment designations in the MDAB related to these pollutants unlikely.

As described in Sections 3.2.5.1 and 3.2.5.2, short-term construction emissions associated with the Modified Project or Alternative 2 could result in an exceedance of state and federal PM10 AAQSs and long-term operation and maintenance emissions associated with the Modified Project could result in exceedances of the state PM10 AAQS; therefore, only the PM10 emissions increases would contribute to an adverse cumulative effect relative to potential exceedances of AAQSs for PM10.

The projects listed in Table 3.1-1 have at least one agency approval, and the Genesis project is currently under construction. Those projects within the MDAB that would be constructed, operated, or decommissioned at the same time as the Modified Project or Alternative 2 could contribute to existing adverse cumulative effects relative to potential exceedances of AAQSs for PM10.

3.2.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to air resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. K-5 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to the approved mitigation measures are warranted. Specifically, Mitigation Measures AQ-01 through AQ-64, which would address air resource-related impacts caused by the approved auxiliary boiler operations, ullage system operation, carbon absorption system operation cooling tower, emergency generators, emergency fire suppression water pump engine, and gasoline dispensing facility; and AQ-SC-08, which required submittal of air permits that are no longer required for the Modified Project, are no longer required because the Modified Project would replace the most polluting elements of the approved solar thermal trough energy generating system with PV technology. However, they would remain relevant to Alternative 2. Also, as described in Chapter 2 and Section 3.2.4, above, the Grant Holder has proposed to incorporate Mitigation Measures AQ-SC1 through AQ-SC7 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in AQ-SC1 through AQ-SC7 also shall be submitted/reported to the BLM. No additional mitigation measures are recommended.

Residual impacts of the Approved Project on air resources would be substantially reduced, but not eliminated, by the Modified Project or Alternative 2. Because no mitigation measures are recommended to address impacts to air resources over and above the actions that already are required as a condition of the existing ROW grant or as otherwise voluntarily implemented by the Grant Holder, development of the Modified Project or Alternative 2 would cause the direct and indirect emissions described in Section 3.2.5.1 and Section 3.2.5.2, respectively, including emissions of PM10 that could contribute to existing exceedances of the state and federal PM10 AAQSs. Residual cumulative effects would be the same as described in Section 3.2.5.3.

TABLE 3.2-10
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR AIR RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
AQ-01 through AQ-64	Not applicable; deleted.	Applicable; no revisions made.
AQ-SC1 through AQ-SC7	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

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California Office of Environmental Health Hazard Assessment (OEHHA), 2013. Hot Spots Unit Risk and Cancer Potency Factors. [http://oehha.ca.gov/air/hot_spots/pdf/CPFs042909.pdf] Accessed October 17, 2013.

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United States Environmental Protection Agency (USEPA), 2012. List of 156 Mandatory Class I Federal Areas. [http://www.epa.gov/visibility/class1.html] last updated May 31, 2012.

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3.3 Biological Resources – Vegetation

This section describes and evaluates the potential impacts of the Modified Project (Alternative 1) and Alternative 2 on vegetation resources. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures are identified. The BLM received scoping comments regarding vegetation resources that focused on conducting seasonal surveys for sensitive plant species, analyzing impacts to sensitive species known to occur in the region, as well as the managing and analyzing impacts associated with invasive species (see Appendix D).

3.3.1 Environmental Setting

Section 3.18 of the 2010 PA/FEIS (Appendix A, p. 3.18-1 et seq.) describes the distinctive bi-modal climate of the Sonoran Desert as it relates to natural communities, invasive plants, and special-status plants with potential to occur within a project study area that encompasses the disturbance area of the Approved Project plus a 1-mile buffer area.

For purposes of analyzing vegetation impacts of the Modified Project, the study area is the same as the study area evaluated in the 2010 PA/FEIS, despite the Modified Project's project footprint relative to the Approved Project. The analysis of impacts of the Modified Project on vegetation resources focuses on the information described, analyzed, and approved as part of the 2010 PA/FEIS and 2010 ROD for the Approved Project, as well as the information contained in the 2012 Special-Status Summer Annual Plant Survey Report conducted for the Modified Project (Tetra Tech EC, Inc, and Karl, 2013). The survey conducted for the Modified Project identified a special-status plant species, Abrams' spurge (*Chamaesyce* [=*Euphorbia*] *abramsiana)*, not identified during the analysis of the Approved Project. Additionally, the survey for the Modified Project identified an increased abundance of another special-status plant species, desert unicorn plant (*Proboscidea althaeifolia*), compared to the analysis conducted for the Approved Project.

3.3.1.1 Abrams' Spurge

Abrams' spurge is a California Native Plant Society (CNPS) Rank 2B.2 species, indicating the species is considered fairly endangered in California, but is more common elsewhere. Abrams' spurge has a California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) (NatureServe) Global and State Rank of G4 S2, indicating that the species is considered imperiled within the state, but apparently secure considering populations outside of California (CNPS, 2013). The species is also included in the CNDDB Special Vascular Plants, Bryophytes, and Lichens List (CNDDB, 2013). Abrams' spurge is a low-growing (prostrate),

TABLE 3.3-1
SUMMARY OF VEGETATION RESOURCES WITHIN THE STUDY AREA FOR THE MODIFIED PROJECT

	Modified Project
Study Area	24,592.2 acres including the area within the solar plant site fence, the area outside the solar plant site fence that would be disturbed by the Modified Project, plus a buffer extended around all components of the previously Approved Project.
Natural Communities	Three ephemeral drainages 1. Desert dry wash woodland (870.7 acres) 2. Unvegetated ephemeral dry wash (11.4 acres) 3. Vegetated ephemeral swales (creosote bush-big galleta association) (473.6 acres) Two upland communities: 1. Sonoran creosote bush scrub (19,390.6 acres) 2. Stabilized and partially stabilized desert dunes (2,662.6 acres) Three other (non-natural) cover types: 1. Agriculture (1,066.3 acres) 2. Disturbed (90.5 acres) 3. Developed (26.5 acres)
Invasive & Noxious Weeds	Eleven species: 1. Sahara mustard 2. Russian thistle 3. salt cedar 4. Mediterranean grass 5. red brome 6. Bermuda grass 7. barley 8. sour clover 9. London rocket 10. nettleleaf goosefoot 11. brome fescue
Special-Status Plants	Nine species: 1. Harwood's milk-vetch 2. Las Animas colubrine 3. ribbed cryptantha 4. winged cryptantha 5. Utah milkvine 6. Harwood's eriastrum 7. cottontop cactus 8. desert unicorn plant 9. Abrams' spurge

SOURCES: PA/FEIS Table 3.18-1 (Appendix A, p. 3.18-2) and Sections 3.18.2 (p. 3.18-1 et seq.) and 3.18.3 (p. 3.18-9 et seq.) and Tetra Tech EC, Inc. and Karl, 2013.

annual species that occurs in sandy areas within Mojavean and Sonoran creosote bush scrub habitats between approximately 600 and 2,700 feet above mean sea level. Abrams' spurge occurs in Riverside, Imperial, San Bernardino, and San Diego counties of California, and extends south into Baja California and Sonora in Mexico, and east into Arizona and Nevada. There are 86 records in the CNDDB for the entire state of California, as well as 78 records in the Consortium of California Herbaria from Riverside, Imperial, San Bernardino, and San Diego counties, several of which are from the McCoy Mountains and Chuckwalla Valley areas in the vicinity of the Modified Project (CCH, 2013; CNPS, 2013). The blooming period for this species is from August to November. Abrams' spurge was identified within the footprint and buffer of the Modified Project during summer 2012 plant surveys as a collection of approximately 2,185 plants in the northwest corner of the survey area (Tetra Tech EC, Inc. and Karl, 2013). Although the surveys included the entirety of the larger study area, the majority of the plants were identified within the footprint associated with the Modified Project.

3.3.1.2 Desert Unicorn Plant

A description of desert unicorn plant is found in Section 3.18.3 of the 2010 PA/FEIS (Appendix A, p. 3.18-12). The summer 2012 plant surveys identified approximately 1,100 individual desert unicorn plants within the study area with widespread distribution, compared to 27 individual plants identified during the analysis of the Approved Project. The analysis of the Approved Project mapped one occurrence of desert unicorn plant in the central portion of the project site and 26 occurrences concentrated in the southern portion, whereas summer 2012 surveys mapped the occurrences of desert unicorn plant throughout the study area, with the exception of the western-most extent of the study area.

3.3.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards specific to vegetation resources are set forth in the 2010 PA/FEIS (see Appendix A, p. 1-8 et seq. and p. BB-1 et seq.). This analysis of the Modified Project and Alternative 2 tiers to and relies on those summaries.

3.3.3 Analytical Methodology

Section 4.17.1 the 2010 PA/FEIS (Appendix A, p. 4.17-1 et seq.) describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project on vegetation. In addition to the sources documented in the 2010 PA/FEIS, as described above, the analysis of the Modified Project also included information contained within an additional rare plant survey report conducted for the BSPP (Tetra Tech EC, Inc. and Karl, 2013).

The vegetation resources impacts associated with the analysis of the Modified Project and Alternative 2 are estimated where necessary, as the majority of the reference information pertains directly to the Approved Project. Therefore, the specific boundaries of habitat types, as well as the locations and relative abundance of identified special-status plant species, are approximated where necessary.

3.3.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to vegetation:

BIO-1, Designated Biologist Selection and Qualifications, requires the assignment of a Designated Biologist to the project.

BIO-2, Designated Biologist Duties, outlines the activities to be performed by the Designated Biologist.

BIO-3, Biological Monitor Selection and Qualifications, requires the assignment of one or more Biological Monitors to the project.

BIO-4, Biological Monitor Duties, outlines the activities to be performed by the Biological Monitor(s).

BIO-5, Designated Biologist and Biological Monitor Authority, requires that the Grant Holder's construction/operation manager act on the advice of the Designated Biologist, Biological Monitor(s), and Compliance Project Manager to ensure conformance with the Biological Resources Conditions of Certification (design features).

BIO-6, Worker Environmental Awareness Program (WEAP), requires the implementation of a project-specific WEAP and outlines the requirements of the WEAP, including educating workers about desert tortoise protection.

BIO-7, Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), requires the implementation of a BRMIMP that includes the requirements of all biological mitigation measures and plans.

BIO-8, Impact Avoidance and Minimization Measures, includes measures to manage the project site and related facilities during site mobilization, operation and maintenance in a manner to avoid or minimize impacts to biological resources.

BIO-14, Weed Management Plan, requires the implementation of a plan to prevent the introduction of any new weeds and the spread of existing weeds as a result of project site mobilization, construction, operation, and closure.

BIO-19, Special-Status Plant Impact Avoidance, Minimization and Compensation, includes special-status plant impact avoidance and minimization measures, late season botanical surveys, avoidance requirements for special-status plants, and off-site compensatory mitigation for special-status plants.

BIO-22, Mitigation for Impacts to State Waters, includes measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

BIO-23, Decommissioning and Reclamation Plan, requires the implementation of a Decommissioning and Reclamation Plan that shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.

BIO-27, In-Lieu Fee Mitigation Option, allows the Grant Holder choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or another applicable in-lieu fee provision.

BIO-28, Project Construction Phasing Plan, allows the Grant Holder to provide compensatory mitigation for the total Project Disturbance Area in four phases.

3.3.5 Environmental Consequences

3.3.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

In general, the direct and indirect impacts of the Modified Project would be similar to, but less in magnitude than, those described for the Approved Project due to the decrease in acreage that would be affected by the project.

Plant Communities

The construction of the Modified Project would result in direct impacts to 3,847 acres of Sonoran creosote bush scrub, 26 acres of desert dry wash woodland, 265 acres of vegetated ephemeral streams supporting the big galleta grass association, and 3.3 acres of unvegetated ephemeral dry washes. The Modified Project would not result in direct or indirect impacts to stabilized and partially stabilized dune habitat, or to the major regional sand transport corridor. The construction, operation and maintenance, and decommissioning of the Modified Project would also result in indirect impacts to Sonoran creosote bush scrub habitat due to the edge effects of construction (e.g., fugitive dust, increased spread of invasive species, etc.). Furthermore, the construction, operation and maintenance, and decommissioning of the Modified Project would result in indirect impacts (e.g., loss of hydrologic connectivity, head cutting on drainages, erosion and sedimentation, etc.) to desert dry wash woodland, vegetated ephemeral streams supporting the big galleta grass association, and unvegetated ephemeral dry washes.

Special-Status Plants

Construction of the Modified Project would not result in direct impacts to Las Animas colubrina (*Colubrina californica*), Harwood's eriastrum (*Eriastrum harwoodii*), and ribbed cryptantha (*Cryptantha costata*), three species that would be directly impacted by the Approved Project (EDAW AECOM, 2009; AECOM, 2010), because it would avoid the location of these plants. Construction of the Modified Project would cause direct impacts to approximately 62 individual plants of Utah milkvine (*Funastrum utahense*) and approximately 248 individual plants of Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*) (AECOM, 2010). Additionally, construction of the Modified Project would result in direct impacts to approximately 2,185 individual plants of Abrams' spurge and approximately 1,091 individual plants of desert unicorn plant (Tetra Tech EC, Inc, and Karl, 2013).

Operation and maintenance and decommissioning of the Modified Project would result in indirect effects (e.g., through the increased spread of invasive species, or through erosion and sedimentation) to the nine species of special-status plants identified in Table 3.3-1. DF BIO-14, which requires the development and implementation of a weed management plan, would reduce the magnitude of, but would not avoid these effects.

Cacti, Yucca, and Native Trees

The 2010 PA/FEIS (Appendix A, p. 4.17-3) identifies several species of non-listed cactus and native desert trees that have been observed within the project study area and that would be would be impacted directly or indirectly for the Approved Project. Because no new or additional species have been mapped or documented in the project study area since the 2010 ROD and because the direct and indirect impacts of the Modified Project would be substantially similar to those of the Approved Project, this analysis tiers to and relies on that analysis. Given the reduction in the area that would be affected by the Modified Project, however, the magnitude of these impacts could be expected to be less than those described for the Approved Project.

Invasive Non-Native Plants

The 2010 PA/FEIS (Appendix A, p. 4.17-3 et seq.) describes and analyzes potential direct and indirect effects of the Approved Project related to invasive non-native plants, including Sahara mustard, tamarisk, Russian thistle, Mediterranean grass, and red brome, which are present in the project study area. and would be expected to increase as a result of construction- and operation-related disturbance. No new species have been mapped or documented in the project study area since the 2010 ROD. Because the direct and indirect impacts of the Modified Project would be substantially similar to those of the Approved Project with respect to the proliferation of these and other non-native species and the concomitant dramatic increase in the fuel load and frequency of fire in many desert ecosystems and displacement of native plants, this analysis tiers to and relies on that analysis. Given the reduction in the area that would be affected by the Modified Project, however, the magnitude of these impacts could be expected to be less than those described for the Approved Project.

3.3.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would be left with the approximately 4,433-acre ROW grant remaining after the partial relinquishment, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The current ROW represents approximately 65 percent of the Approved Project ROW from the 2010 PA/FEIS and 2010 ROD, the remainder of which the Grant Holder relinquished on March 7, 2013. Accordingly, the impacts of Alternative 2 would be similar to, but less in magnitude then, those described for the Approved Project.

Plant Communities

Construction of Alternative 2 would result in direct impacts to 4,123 acres of Sonoran creosote bush scrub, 31 acres of desert dry wash woodland, 276 acres of vegetated ephemeral streams supporting the big galleta grass association, and 4.1 acres of unvegetated ephemeral dry washes. The construction, operation and maintenance, and decommissioning of Alternative 2 also would result in indirect impacts to Sonoran creosote bush scrub due to the edge effects of construction (e.g., fugitive dust, increased spread of invasive species, etc.). Furthermore, the construction,

operation and maintenance, and decommissioning of Alternative 2 would result in indirect impacts (e.g., loss of hydrologic connectivity, head cutting on drainages, erosion and sedimentation, etc.) to desert dry wash woodland, vegetated ephemeral streams supporting the big galleta grass association, and unvegetated ephemeral dry washes.

Special-Status Plants

Construction of Alternative 2 would result in direct impacts to approximately 87 individual plants of Utah milkvine, approximately 248 individual plants of Harwood's milk-vetch, approximately 2,185 individual plants of Abrams' spurge, approximately 1,093 individual plants of desert unicorn plant, and approximately 10 individual plants of Las Animas colubrina (AECOM, 2010; Tetra Tech EC, Inc. and Karl, 2013).

The operation and maintenance and decommissioning of Alternative 2 would result in indirect effects (e.g., through the increased spread of invasive species, or through erosion and sedimentation) to the nine species of special-status plants identified in Table 3.3-1. Identified measures, including DF BIO-14, which requires the development and implementation of a weed management plan would reduce the magnitude of, but would not avoid these effects.

Cacti, Yucca, and Native Trees

The 2010 PA/FEIS (Appendix A, p. 4.17-3) identifies several species of non-listed cactus and native desert trees that have been observed within the project study area and that would be would be impacted directly or indirectly for the Approved Project. Because no new or additional species have been mapped or documented in the project study area since the 2010 ROD and because the direct and indirect impacts of Alternative 2 would be substantially similar to those of the Approved Project, this analysis tiers to and relies on that analysis.

Invasive Non-Native Plants

The 2010 PA/FEIS (Appendix A, p. 4.17-3 et seq.) describes and analyzes potential direct and indirect effects of the Approved Project related to invasive non-native plants, including Sahara mustard, tamarisk, Russian thistle, Mediterranean grass, and red brome, which are present in the project study area. and would be expected to increase as a result of construction- and operation-related disturbance. No new species have been mapped or documented in the project study area since the 2010 ROD. Because the direct and indirect impacts of Alternative 2 would be substantially similar to those of the Approved Project with respect to the proliferation of these and other non-native species and the concomitant dramatic increase in the fuel load and frequency of fire in many desert ecosystems and displacement of native plants, this analysis tiers to and relies on that analysis.

3.3.5.3 Cumulative Effects

Direct and indirect effects of the Modified Project, as well as Alternative 2, on vegetation resources include permanent impacts to plant communities and special-status plant species, as described in Sections 3.3.5.1 and 3.3.5.2, above. These include direct impacts to 3,847 acres of

Sonoran creosote bush scrub, 26 acres of desert dry wash woodland, 265 acres of vegetated ephemeral streams supporting the big galleta grass association, and 3.3 acres of unvegetated ephemeral dry washes. In addition, construction of the Modified Project or Alternative 2 would result in direct impacts to several annual special-status plants including Utah milkvine, Harwood's milk-vetch, Abrams' spurge, and desert unicorn plant. The geographic scope of the analysis of cumulative effects on vegetation resources encompasses the Palo Verde Valley; the geographic scope of the analysis of the cumulative effects on special-status plant species encompasses the range of the respective species, as described in Section 4.17.3 of the 2010 PA/FEIS. The temporal scope of cumulative effects plant communities and special-status plant species encompasses the duration of all construction, operation and maintenance, decommissioning, and site reclamation and revegetation activities; anticipated to be a period of approximately 30 to 40 years.

Cumulative effects on vegetation resources include the effects of the Modified Project or Alternative 2, as well as the effects of other past, present, and reasonably foreseeable future actions within the geographic scope. These include the following projects described in Tables 3.1-1 and 3.1-2 and shown in Figure 3.1-1: Genesis Solar Energy Project, McCoy Solar Energy Project, Blythe Energy Project II, Blythe Mesa Solar I, McCoy Soleil, enXco, Big Maria Vista Solar Project, Mule Mountain Solar Project, and Desert Quartzite. The ongoing impacts associated with past actions within the geographic scopes of the cumulative analyses for plant communities and special-status species are reflected in Section 3.3.1 above, as well as Section 3.18 of the 2010 PA/FEIS (Appendix A, p. 3.18-1 et seq.).

Plant Communities

The development of present and reasonably foreseeable future projects, as identified in Tables 3.1-1 and 3.1-2 would result in the conversion of existing plant communities within projects' boundaries to industrial and commercial uses.

Table 3.3-2 presents the total acreage of vegetation communities within the geographic scope and the cumulative impacts on each community type from present and reasonably foreseeable future projects. A loss of 10.6 percent of the Sonoran creosote bush scrub habitat and 14.8 percent of the desert dry wash woodland habitat in the cumulative analysis area is projected to occur as a result of future and reasonably foreseeable future projects.

As shown in Table 3.3-2, implementation of the Modified Project would contribute 3,847 acres (8.9 percent of the total projected cumulative impact) and Alternative 2 would contribute 4,123 acres (9.6 percent of the total) to the cumulative impact on Sonoran creosote bush scrub in the Palo Verde Valley.

As shown in Table 3.3-2, implementation of the Modified Project would contribute 26 acres (0.2 percent of the total projected cumulative impact) and Alternative 2 would contribute 31 acres (0.2 percent of the total) to the cumulative impact on desert dry wash woodland in the Palo Verde Valley.

The Modified Project would contribute 265 acres and Alternative 2 would contribute 276 acres of the projected impacts to vegetated ephemeral streams supporting the big galleta grass association. The total cumulative impact to this vegetation community within the geographic scope is not available because this community is not comprehensively mapped in the Palo Verde Valley. However, based on the environmental analyses prepared for other projects within the geographic scope, the McCoy Solar Energy Project also would affect 139.4 acres of this vegetation community (BLM, 2012). Other projects for which such analyses are not yet available may also affect this vegetation community, but the extent of such effects is not known at this time.

Special-Status Plants

As discussed above and identified in Table 3.3-2, the development of present and reasonably foreseeable future projects would result in the conversion of existing plant communities, which would remove habitat for many special-status plant species. Therefore, the loss of this habitat is anticipated to result in substantial cumulative impacts on populations of the special-status plant species analyzed under the Modified Project and Alternative 2. However, the implementation of DFs listed in Section 3.3.4 would minimize the loss of special-status plant species associated with the Modified Project and Alternative 2, and protect similar habitat off-site.

TABLE 3.3-2
CUMULATIVE IMPACTS RELATED TO VEGETATION

Vegetation Community	Acreage within the Planning Area	Impacts of Present/Future Projects	Impacts of Modified Project	Impacts of Alternative 2
Sonoran creosote bush scrub	403,580 acres	42,837 acres; 10.6% of total	3,847 acres (8.9% of present and future projects)	4,123 acres (9.6% of present and future projects)
Desert dry wash woodland	108,335 acres	16,030 acres; 14.8% of total	26 acres (0.2% of present and future projects)	31 acres (0.2% of present and future projects)

SOURCE: Vegetation types based on Map 3-3 in BLM, 2002. Impact data based on cumulative project information in Tables 3.1-1 and 3.1-2 and shown in Figure 3.1-1.

3.3.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to biological resources, including vegetation, are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-63 et seq.). Changes in the Approved Project that would occur as a result of the Modified Project, based on the description and analysis in this EIS, suggest that revisions to the existing, approved mitigation measures are warranted. As described in Chapter 2 and Section 3.3.4, above, the Grant Holder has proposed to incorporate Mitigation Measures BIO-1 through BIO-8, BIO-14, BIO-19, BIO-22, BIO-23, BIO-27, and BIO-28, which address impacts to vegetation and have been revised to reflect the Modified Project, as project design features; therefore, these are

not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in these DFs also shall be submitted/reported to the BLM. No additional mitigation measures are recommended.

Because no new or modified mitigation measures are recommended, residual impacts related to vegetation resources would be the same as those described in Sections 3.3.5.1, 3.3.5.2, and 3.3.5.3.

TABLE 3.3-3
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR VEGETATION RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
BIO-1 through BIO-8, BIO-14, BIO-19, BIO-22, BIO-23, BIO-27, and BIO-28	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

AECOM. 2010. Blythe Solar Power Project Biological Resources Data. Riverside County, California. Prepared for Palo Verde Solar I, LLC.

BLM, 2002. Proposed Northern & Eastern Colorado Desert Coordinated Management Plan/Final Environmental Impact Statement, Map 3-3, July.

California Consortium of Herbaria (CCH). 2013. Record results for Chamaesyce abramsiana (including nomenclatural synonyms). [http://ucjeps.berkeley.edu/consortium] Accessed October 12, 2013.

California Department of Fish and Wildlife, Natural Diversity Database (CNDDB). April 2013. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 73 pp.

California Native Plant Society (CNPS). 2013. Inventory Plant Detail for Chamaesyce abramsiana. [http://www.rareplants.cnps.org] Accessed October 12, 2013.

EDAW AECOM, 2009. Blythe Solar Power Project Biological Technical Report. Riverside County, California. Prepared for Solar Millennium, LLC and Chevron Energy Solutions.

Tetra Tech EC, Inc. and Karl, 2013. 2012 Special-Status Summer Annual Plant Survey Report. Blythe Solar Power Project. Riverside County, CA. Prepared for NextEra Blythe Solar Energy Center, LLC.

3.4 Biological Resources – Wildlife

This section describes and evaluates issues related to wildlife for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS, and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures are identified.

The BLM received scoping comments regarding wildlife resources focused on the importance of analyzing impacts to sensitive species known to occur within the region, including desert tortoise (*Gopherus agassizii*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), American badger (*Taxidea taxus*), western burrowing owl (*Athene cunicularia hypugaea*), loggerhead shrike (*Lanius ludovicianus*), Swainson's hawk (*Buteo swainsoni*), and Mojave fringe-toed lizard (*Uma scoparia*). Additional scoping comments received by the BLM regarding wildlife resources focused on the importance of analyzing impacts to wildlife movement corridor and landscape-level migration areas. The Scoping Report is provided in Appendix D.

3.4.1 Environmental Setting

Section 3.23 of the 2010 PA/FEIS (Appendix A, p. 3.23-1 et seq.) describes the variety of desert-adapted wildlife including reptiles, birds, and mammals that use the natural plant communities that occur within the Project study area, which encompasses the disturbance area of the Approved Project plus a 1-mile buffer area.

For purposes of analyzing wildlife impacts of the Modified Project and Alternative 2, the study area is the same as the study area evaluated in the 2010 PA/FEIS, despite the Modified Project's (and Alternative 2's) reduced solar plant site area within the approved ROW. In addition to the reduced disturbance area of the Modified Project, the requested change in solar technology also may result in different impacts than the approved solar technology. Therefore, additional potentially affected species have been included for the purposes of this analysis. The analysis of the Modified Project is reliant on the descriptions of potentially affected species provided in the 2010 PA/FEIS, as well as supplemental information from ongoing monitoring from solar projects under construction in the Mojave Desert. Analysis conducted for the Modified Project identified four additional special-status wildlife species not identified during the analysis of the Approved Project: long-eared owl (*Asio otus*), brown pelican (*Pelecanus occidentalis*), Yuma clapper rail (*Rallus longirostris yumanensis*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Special-status species potentially affected by the Modified Project are listed in Table 3.4-1, below. Species identified during biological surveys conducted for the Approved Project and Modified Project are listed in Table 3.4-1 in bold-face type.

TABLE 3.4-1
SPECIAL-STATUS WILDLIFE POTENTIALLY AFFECTED BY THE MODIFIED PROJECT

Common Name	Scientific Name	Status State/Federal/BLM
WILDLIFE		
Reptiles/Amphibians		
desert tortoise	***Gopherus agassizii***	**CT/FT/__**
Couch's spadefoot toad	*Scaphiopus couchii*	CSC/__/BLM Sensitive
Mojave fringe-toed lizard	***Uma scoparia***	**CSC/__/BLM Sensitive**
desert rosy boa	*Charina (Lichanura) trivirgata*	__/__/__
chuckwalla	***Sauromalus obesus***	__/__/__
Birds		
western burrowing owl[1]	***Athene cunicularia hypugaea***	**CSC/BCC/BLM Sensitive**
golden eagle	*Aquila chrysaetos*	CFP/BGEPA/BLM Sensitive
short-eared owl	*Asio flammeus*	CSC/__/__
long-eared owl[1]	*Asio otus*	CSC/__/__
ferruginous hawk	***Buteo regalis***	**WL/__/BLM Sensitive**
Swainson's hawk	*Buteo swainsoni*	ST/__/__
prairie falcon[1]	*Falco mexicanus*	WL/BCC/__
American peregrine falcon	*Falco peregrinus anatum*	CFP/__/__
Vaux's swift	*Chaetura vauxi*	CSC/__/__
mountain plover	*Charadrius montanus*	CSC/__/BLM Sensitive
northern harrier	*Circus cyaneus*	CSC/__/__
gilded flicker	*Colaptes chrysoides*	CE/__/__
Sonoran yellow warbler	***Dendroica petechia sonorana***	**CSC/__/__**
California horned lark[1]	*Eremophila alpestris actia*	WL/__/__
yellow-breasted chat	*Icteria virens*	CSC/__/__
Loggerhead shrike[1]	***Lanius ludovicianus***	**CSC/BCC/__**
Gila woodpecker	*Melanerpes uropygialis*	CE/__/__
brown pelican[1]	*Pelecanus occidentalis*	CFP/delisted/__
black-tailed gnatcatcher[1]	***Polioptila melanura***	**__/__/__**
purple martin	*Progne subis*	CSC/__/__
vermilion flycatcher	*Pyrocephalus rubinus*	CSC/__/__
Yuma clapper rail[1]	*Rallus longirostris yumanensis*	CFP,CT/FE/__
Bendire's thrasher	*Toxostoma bendirei*	CSC/__/BLM Sensitive
crissal thrasher	*Toxostoma crissale*	CSC/__/__
Le Conte's thrasher	*Toxostoma lecontei*	WL/BCC/BLM Sensitive
yellow-headed blackbird[1]	*Xanthocephalus xanthocephalus*	CSC/__/__
Mammals		
pallid bat[1]	*Antrozous pallidus*	CSC/__ /BLM Sensitive
Townsend's big-eared bat	*Corynorhinus townsendii*	CC/__/BLM Sensitive
burro	*Equus asinus*	__/__/__
spotted bat	*Euderma maculatum*	CSC/__/ BLM Sensitive
western mastiff bat[1]	*Eumops perotis californicus*	CSC/__/ BLM Sensitive
hoary bat	*Lasiurus cinereus*	__/__/__
California leaf-nosed bat	*Macrotus californicus*	CSC/__/ BLM Sensitive
Arizona myotis	*Myotis occultus*	CSC/__/__
cave myotis	*Myotis velifer*	CSC/__/ BLM Sensitive
Yuma myotis	*Myotis yumanensis*	__/__/BLM Sensitive
Colorado Valley woodrat	*Neotoma albigula venusta*	__/__/__
pocket free-tailed bat	*Nyctinomops femorosaccus*	CSC/__/__
big free-tailed bat	*Nyctinomops macrotis*	CSC/__/__

TABLE 3.4-1 (Continued)
SPECIAL-STATUS WILDLIFE POTENTIALLY AFFECTED BY THE MODIFIED PROJECT

Common Name	Scientific Name	Status State/Federal/BLM
WILDLIFE		
burro deer[2]	*Odocoileus hemionus eremicus*	__/__/__
Nelson's bighorn sheep[2]	*Ovis canadensis nelsoni*	__/__/BLM Sensitive
Yuma mountain lion	*Puma concolor browni*	CSC/__/__
American badger	***Taxidea taxus***	**CSC/__/__**
desert kit fox	***Vulpes macrotis arsipus***	**__/__/__**

NOTES:

1 Species found dead or injured as reported in ongoing monitoring data from solar projects under construction in the Mojave Desert
2 Potential deer or bighorn scat was found during 2009 field survey but could not be differentiated to species. Scat was more likely to be deer.

Status codes:

Federal

FT = Federally listed, threatened: species likely to become endangered within the foreseeable future
BCC = Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities.
delisted = Removed from the endangered species list.

State

CFP = California fully protected
CSC = California Species of Special Concern Species of concern to CDFW because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
CE = State listed as endangered
CT = State listed as threatened
CC = California Candidate for listing as threatened or endangered
WL = State watch list

Bureau of Land Management

BLM Sensitive = Species that require special management consideration to avoid potential future listing under the FESA and that have been identified in accordance with procedures set forth in BLM Manual section 6840.

SOURCE: CNDDB, 2013.

3.4.1.1 Long-Eared Owl

The long-eared owl, a California Department of Fish and Wildlife (CDFW) Species of Special Concern, inhabits a wide variety of habitats within its range, and is known to occur throughout most of California. This species typically nests in old corvid and raptor nests in woodlands adjacent to shrubland or grassland habitats. Long-eared owls feed almost exclusively on rodents, but are also known to prey upon birds (CDFG, 2008a).

Suitable foraging habitat and limited nesting sites are present within, and adjacent to the project study area, but is most likely to occur as a migrant. The species was not identified during the analysis for the Approved Project, but has been reported as deceased or injured in ongoing monitoring data from solar projects under construction in the Mojave Desert.

3.4.1.2 Brown Pelican

The brown pelican, a California Fully Protected species, typically is restricted to coastline habitats within its California range, although the species is common at the Salton Sea. The

species is known to occur as a resident and a migrant within California. Migrating populations are known to travel between breeding grounds in the Gulf of California and habitats as far northward as British Columbia. Brown pelicans feed almost exclusively on small fish, but are also known to scavenge dead fish (e.g., at fish cleaning stations) on occasion (Cornell Lab of Ornithology, 2013).

The brown pelican is expected to occur in the vicinity of the project study area only as a migrant. The species was not identified during the analysis for the Approved Project, but has been reported as deceased or injured in ongoing monitoring data from solar projects under construction in the Mojave Desert.

3.4.1.3 Yuma Clapper Rail

The Yuma clapper rail is a California Fully Protected, California Threatened, and Federally Endangered species. Within California, the Yuma clapper rail is restricted to the lower Colorado River and Salton Sea areas. The Yuma clapper rail nests within freshwater marsh habitats, and feeds primarily on crayfish and other freshwater invertebrates (Dudek and ICF International, 2012). The breeding range of the Yuma clapper rail has been restricted due to a regional loss of wetland habitats in recent decades.

The Yuma clapper rail is expected to occur in the vicinity of the project study area only as a migrant. The Yuma clapper rail was not identified during the analysis for the Approved Project, but has been reported as deceased or injured in ongoing monitoring data from solar projects under construction in the Mojave Desert.

3.4.1.4 Yellow-Headed Blackbird

The yellow-headed blackbird, a CDFW Species of Special Concern, inhabits marsh habitat with tall emergent vegetation. Regionally, the breeding distribution of the species is limited to the lower Colorado River and Salton Sea areas. The breeding range of the species has been restricted due to a regional loss of wetland habitats in recent decades (CDFG, 2008b).

Within the vicinity of the project study area, the species is expected to occur only as a migrant. The species was not identified during the analysis for the Approved Project, but has been reported as deceased or injured in ongoing monitoring data from solar projects under construction in the Mojave Desert.

3.4.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards specific to wildlife resources are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. BB-1 et seq.). This analysis of the Modified Project and Alternative 2 tiers to and relies on those summaries.

3.4.3 Analytical Methodology

Section 4.21.1 the 2010 PA/FEIS (Appendix A, p. 4.21-1 et seq.) describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project. This analysis of impacts of the Modified Project and Alternative 2 tiers to and relies on the same methodologies.

3.4.4 Proposed Design Features

The Grant Holder has proposed design features (DFs) to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to wildlife:

BIO-1, Designated Biologist Selection and Qualifications, requires the assignment of a Designated Biologist to the project.

BIO-2, Designated Biologist Duties, outlines the activities to be performed by the Designated Biologist.

BIO-3, Biological Monitor Selection and Qualifications, requires the selection of one or more Biological Monitors to the project.

BIO-4, Biological Monitor Duties, outlines the activities to be performed by the Biological Monitor(s).

BIO-5, Designated Biologist and Biological Monitor Authority, requires that the Grant Holder's construction/operation manager act on the advice of the Designated Biologist, Biological Monitor(s), and Compliance Project Manager to ensure conformance with the Biological Resources Conditions of Certification (design features).

BIO-6, Worker Environmental Awareness Program (WEAP), requires the implementation of a project-specific WEAP and outlines the requirements of the WEAP, including educating workers about desert tortoise protection.

BIO-7, Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), requires the implementation of a BRMIMP that includes the requirements of all biological mitigation measures and plans.

BIO-8, Impact Avoidance and Minimization Measures, includes measures to manage the project site and related facilities during site mobilization, operation and maintenance in a manner to avoid or minimize impacts to biological resources.

BIO-9, Desert Tortoise Clearance Surveys and Fencing, describes the required process and measures for installing and maintaining desert tortoise exclusion fencing and clearing the site of tortoises.

BIO-10, Desert Tortoise Relocation/Translocation Plan, requires the implementation of a Desert Tortoise Relocation/Translocation Plan consistent with current USFWS approved guidelines.

BIO-11, Desert Tortoise Compliance Verification, requires that the Grant Holder cooperate with the CEC's and BLM's efforts to verify the project owner's compliance with,

or the effectiveness of, mitigation measures set forth in the Conditions of Certification (design features).

BIO-12, Desert Tortoise Compensatory Mitigation, requires compensatory mitigation for habitat loss and potential take of desert tortoise.

BIO-13, Raven Management Plan, requires implementation of a Raven Monitoring, Management**,** and Control Plan in order to avoid any project-related increases in raven numbers during construction, operation, and decommissioning.

BIO-14, Weed Management Plan, requires the implementation of a plan to prevent the introduction of any new weeds and the spread of existing weeds as a result of project site mobilization, construction, operation, and closure.

BIO-15, Avian and Bat Protection Plans, requires the implementation of a Bird and Bat Conservation Strategy (BBCS) and outlines the components of the BBCS, including baseline surveys, a mortality and injury monitoring program, adaptive management, and care and transport for injured birds or bats.

BIO-16, Pre-Construction Nest Surveys and Avoidance Measures, requires Pre-construction nest surveys to be conducted if site mobilization and construction, mowing, trimming, or any vegetation maintenance activities would occur from February 1 through July 31.

BIO-17, American Badger and Desert Kit Fox Impact Avoidance and Minimization Measures, requires baseline pre-construction desert kit fox and American badger surveys and implementation of an American Badger and Desert Kit Fox Mitigation and Monitoring Plan.

BIO-18, Burrowing Owl Impact Avoidance, Minimization, and Compensation Measures, includes measures to avoid, minimize and offset impacts to burrowing owls, including pre-construction surveys, passive relocation, avoidance measures, and compensatory mitigation.

BIO-22, Mitigation for Impacts to State Waters, includes measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.

BIO-23, Decommissioning and Reclamation Plan, requires the implementation of a Decommissioning and Reclamation Plan that shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.

BIO-24, Golden Eagle Inventory and Monitoring, includes measures to avoid or minimize project-related construction impacts to golden eagles.

BIO-25, Evaporation Pond Netting and Monitoring, includes requirements for covering the evaporation ponds prior to any discharge with mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds.

BIO-26, Couch's Spadefoot Toad Impact Avoidance and Minimization Measures, requires the implementation of a Couch's Spadefoot Toad Protection and Mitigation Plan to

avoid, minimize or mitigate impacts to Couch's spadefoot toads and their breeding habitat during construction and operation of the project.

BIO-27, In-Lieu Fee Mitigation Option, allows the Grant Holder choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or another applicable in-lieu fee provision.

BIO-28, Project Construction Phasing Plan, allows the Grant Holder to provide compensatory mitigation for the total Project Disturbance Area in four phases.

3.4.5 Environmental Consequences

3.4.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

The construction of the Modified Project would not result in direct or indirect impacts to the habitat of Mojave fringe-toed lizard and Nelson's bighorn sheep, two species that were expected to be impacted by the Approved Project. The following species would be impacted by the Modified Project.

Couch's Spadefoot Toad

The construction of the Modified Project would result in a direct and permanent impact to 0.13 acre of Couch's spadefoot toad habitat. Although the species was not observed on site, suitable habitat for the species was observed during 2010 surveys (AECOM, 2010). The construction, operation, maintenance, and decommissioning of the Modified Project have the potential to result in direct effects to Couch's spadefoot toads, and indirect effects to Couch's spadefoot toad habitat (e.g., through the increased spread of invasive species). Additionally, increased vehicle traffic by solar facility personnel outside of the enclosed solar facility during the construction, operation and maintenance, and decommissioning of the Modified Project has the potential to result in the direct mortality, injury, or harassment of Couch's spadefoot toads.

Desert Tortoise

The construction of the Modified Project would result in a direct and permanent impact to 4,070 acres of desert tortoise habitat. Although the disturbance area for the Modified Project would not directly overlay previously identified locations of desert tortoise, the construction activities associated with the Modified Project have the potential to result in the direct mortality, injury, and harassment of desert tortoises (AECOM, 2010). The operation, maintenance, and decommissioning of the Modified Project would result in additional indirect effects to desert tortoise habitat (e.g., through the increased spread of invasive species). Additionally, increased vehicle traffic by solar facility personnel outside of the enclosed solar facility during the construction, operation and maintenance, and decommissioning of the Modified Project has the potential to result in the direct mortality, injury, or harassment of desert tortoises.

Bats, and Migratory and Nesting Birds

The construction of the Modified Project could result in direct impacts to bats and migratory birds associated with collisions with installed solar panels and other infrastructure. During both day and night activity, migratory birds may collide with infrastructure associated with the Modified Project. Migratory birds also may be attracted to solar panel arrays, possibly interpreting the reflective panels as bodies of water. The numbers or species of birds that may be affected from collisions with solar panels or other infrastructure cannot be known with certainty, though ongoing monitoring data from solar projects under construction in the Mojave Desert suggest that common and special-status migratory birds may be susceptible to collisions with panels. Several migratory birds, including the federally and state endangered Yuma clapper rail, have been reported as deceased in such data. The cause of death is under investigation by the USFWS, and has not been shown to be result of facility operation. The potential for direct impacts to migratory birds would continue through the operation and maintenance phase, until the removal of the solar panels and other infrastructure during the decommissioning phase of the Modified Project. Common and special-status bats may be similarly prone to injury or fatality resulting from collisions with solar facilities. Potential indirect impacts to bats and migratory and nesting birds associated with the construction, operation and maintenance, and decommissioning of the Modified Project include the removal of 4,070 acres of suitable foraging and nesting habitat and associated decreased abundance of prey (e.g., insects, rodents, etc.). Additionally, noise levels associated with construction activities (e.g., hydraulic post driving, etc.) have the potential to displace nearby roosting bats, if present nearby, and indirectly impact nesting birds.

Golden Eagle

Potential indirect impacts to golden eagle associated with the Modified Project include the removal of 4,070 acres of suitable foraging habitat and associated decreased abundance of prey species.

Western Burrowing Owl

Potential indirect impacts to western burrowing owl associated with the Modified Project include the removal of 4,070 acres of suitable foraging and nesting habitat and associated decreased abundance of prey species. Additionally, the disturbance area for the Modified Project would directly impact identified locations of five active burrows and approximately 51 inactive burrows (AECOM, 2010). Additionally, increased vehicle traffic by solar facility personnel outside of the enclosed solar facility during the construction, operation and maintenance, and decommissioning of the Modified Project has the potential to result in the direct mortality, injury, or harassment of western burrowing owls.

American Badger and Desert Kit Fox

Potential indirect impacts to American badger and desert kit fox associated with the Modified Project include the removal of 4,070 acres of suitable foraging and breeding habitat and associated decreased abundance of prey species. Additionally, the disturbance area for the Modified Project would directly impact identified locations of approximately 17 desert kit fox complexes, 93 desert kit fox burrows, 8 American badger dens, and 47 American badger predation burrows (AECOM, 2010). Project construction has the potential to injure or kill American badgers and desert kit foxes

by crushing them with construction equipment or by crushing den entrances, which would prevent them from escaping. Following the erection of perimeter fencing around the solar plant site and subsequent wildlife clearance surveys, the perimeter fence would limit badger and kit fox access to the main project site, and consequently would reduce the likelihood of injury on the site during construction. Additionally, increased vehicle traffic by solar facility personnel outside of the enclosed solar facility during the construction, operation and maintenance, and decommissioning of the Modified Project has the potential to result in the direct mortality, injury, or harassment of American badgers and desert kit foxes.

In late 2011, the first known cases of canine distemper virus (CDV) were observed in desert kit foxes about 20 miles west of Blythe on public lands managed by the BLM and leased to Genesis Solar, LLC to construct the Genesis Solar Energy Project. CDFW believes that the outbreak originated from an infected host animal entering the site, possibly a wild or domestic dog, American badger, or other carnivore. The rapid spread of CDV within the kit fox population was facilitated by the project-related displacement of infected animals from the Genesis site into new kit fox territories. Subsequently, desert kit foxes were captured for disease testing at the First Solar Desert Sunlight, Solar Millennium Palen, Genesis Ford Dry Lake, and at Southern California Edison's Colorado River Substation, and CDV was identified at the two later sites, which span a distance of about 40 miles on the I-10 corridor within the Chuckwalla Valley (CEC, 2012). The CDFW Wildlife Investigations Lab continues to monitor the health of desert kit foxes and is attempting to characterize the spread and significance of the disease on regional kit fox populations. To date, there has been no effort to test desert kit foxes in the project area for CDV.

The typical practice for solar projects has been to exclude desert kit foxes from project areas during pre-construction clearing of project sites by “passive relocation” methods (i.e., by closing burrows, forcing foxes to locate to new off-site burrows). In the absence of protective measures the Modified Project has the potential to worsen the CDV outbreak by raising kit fox stress levels and causing increased susceptibility to infection, causing increased movement of diseased animals thereby increasing the spread of disease into new areas, or placing healthy kit foxes into contact with off-site infected animals (see, e.g., CEC, 2012). The implementation of DF BIO-17, which outlines desert kit fox avoidance and minimization measures, would reduce potential impacts to desert kit fox.

3.4.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would be left with the approximately 4,433-acre ROW grant remaining after the partial relinquishment, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The current ROW approval represents approximately 65 percent of the Approved Project from the 2010 PA/FEIS and 2010 ROD, the remainder of which the Grant Holder relinquished on March 7, 2013. Direct and indirect impacts to all species, except migratory birds, would be the same as under the Modified Project, but impacts related to habitat removal would be increased in proportion to the increased size of the disturbance footprint. Direct impacts to migratory birds

also would be slightly increased under Alternative 2 compared to the Modified Project in proportion to the increased solar plant site and due to the potential for collisions with solar trough structures. The overall effect is unknown, but may be similar to the potential for collisions with solar PV panels as discussed in Section 3.4.5.1, above.

3.4.5.3 Cumulative Effects

Direct and indirect effects of the Modified Project and Alternative 2 on wildlife resources include permanent impacts to habitat used for breeding, nesting, migration, and foraging, as described in Sections 3.4.5.1 and 3.4.5.2, above. The geographic scope for this cumulative impact analysis considers the incremental effects of the analyzed alternatives relative to other past, present, and reasonably foreseeable projects that affect wildlife. For wildlife resources, the geographic scope of analysis is based on species distribution and landforms surrounding the project site and the natural boundaries of the resource affected, rather than jurisdictional boundaries.

The analysis considers potential effects at different scales for different species, with the analysis generally concentrating on wildlife resources in the Palo Verde watershed and a portion of the Chuckwalla Valley watershed in eastern Riverside County. This scale was used to analyze cumulative effects on Couch's spadefoot toad, western burrowing owl, American badger, and desert kit fox. The geographic scope for assessing cumulative effects to desert tortoise is the Eastern Colorado Recovery Unit, and for golden eagle foraging habitat is a 10-mile buffer around the project site.

The temporal scope of cumulative effects on wildlife resources encompasses the duration of all construction, operation and maintenance, decommissioning, and site reclamation and restoration activities.

Cumulative effects on wildlife resources include the effects of the Modified Project and Alternative 2, as well as the effects of other past, present, and reasonably foreseeable future actions. All of the projects in Tables 3.1-1 and 3.1-2, with the exception of the Quartzsite project in Arizona, are within the geographic scope of the cumulative analysis for wildlife resources, though the specific range of habitat for each species may not include each of these projects. The ongoing impacts associated with past actions within the geographic scope of the cumulative analysis for wildlife resources are reflected in Section 3.4.1, above.

Desert Tortoise

The cumulative effects study area for desert tortoise considered existing and future projects in the Eastern Colorado Recovery Unit planning area, as defined in the Desert Tortoise Recovery Plan (USFWS, 1994). The Recovery Plan focuses on desert tortoise populations within each of five distinct recovery units, with the fundamental recovery goal of ensuring sufficient population size and stability within an ample amount of protected habitat in each area. The Eastern Colorado Recovery Unit includes the Joshua Tree DWMA and Chuckwalla DWMA, and includes both the Chuckwalla Valley and Palo Verde Valley. USFWS-designated critical habitat for desert tortoise occurs within the Chuckwalla Unit, which significantly overlaps the Joshua Tree and Chuckwalla DWMAs.

While desert tortoises occur in low densities in the Palo Verde Valley, the project site is not located within or between lands that are specifically managed for desert tortoise conservation. The Joshua Tree DWMA, Chuckwalla DWMA, and designated critical habitat for desert tortoise are greater than 10 miles west of the project site and would not be impacted by the Modified Project or Alternative 2. A 2.6 million-acre study area was identified for desert tortoise in the Eastern Colorado Recovery Unit, of which approximately 35,998 acres (1.4 percent) would be impacted by future projects (Table 3.4-2). The Modified Project would contribute approximately 11.4 percent and Alternative 2 would contribute 12.3 percent of the total cumulative impact from future projects. The loss of tortoise habitat and direct and indirect effects to this species are anticipated to result in cumulative effects on populations; however, the implementation of protection measures described in Table 2-6 and Section 3.4.5.4 that include salvage of desert tortoises, compensatory mitigation, and site restoration following decommissioning would ensure that the loss of tortoise habitat is adequately compensated for and comparable or higher quality habitat would be protected off-site.

Couch's Spadefoot Toad

The development of present and reasonably foreseeable future projects, as identified in Tables 3.1-1 and 3.1-2, would result in direct and indirect impacts to Couch's spadefoot toad, including the loss of suitable habitat. The contribution of the Modified Project or Alternative 2 to this impact would be reduced through implementation of the Couch's Spadefoot Toad Protection and Mitigation Plan required by DF BIO-26.

A geographic information system (GIS)-based analysis identified 314,564 acres of potential habitat for Couch's spadefoot toad in the Palo Verde watershed (Table 3.4-2). A loss of 10.0 percent of the Couch's spadefoot toad habitat in the cumulative analysis area is projected to occur as a result of future and reasonably foreseeable future projects, including the Modified Project or Alternative 2.

As shown in Table 3.4-2, implementation of the Modified Project or Alternative 2 would contribute 0.13 acre to this cumulative impact on Couch's spadefoot toad habitat (less than 0.01 percent of the total projected cumulative impact).

Bats and Migratory and Nesting Birds

The development of present and reasonably foreseeable future projects, as identified in Tables 3.1-1 and 3.1-2, may result in cumulative impacts to migratory and other special-status birds and special-status bats associated with collisions with solar panels and other site infrastructure, as described in Section 3.4.5.1. However, given that the avian and bat collision impact has only recently been described, the potential cumulative impact can only be speculated at this time. Thus, while there is a potential for cumulative impacts to avian and bat species, the scale cannot be fully known.

With the implementation of DFs BIO-15 and BIO-25, the Modified Project or Alternative 2 would be able to identify incremental direct and indirect impact on special-status, resident, and migratory birds and special-status bats. Even so, monitoring evidence from the Genesis and

Desert Sunlight projects in Riverside County suggests that common and special-status birds and bats could be attracted to the site and that injury and mortality of several birds per month could be expected (see, e.g., Genesis Solar, LLC, 2013a, 2013b, and 2013c; Ironwood Consulting, Inc., 2012, 2013a, 2013b). It is not known whether the contribution of each project to the overall cumulative impact to common and special-status birds and bats would be additive, with similar mortality observed between different project sites or whether some areas would be more prone to impacts due to the presence (or absence) of nearby surface water or other features. As an example of potential impacts, the Desert Sunlight Project located roughly 35 miles west of the site reported 27 bird fatalities and one bat mortality in 2012 (Ironwood Consulting Inc., 2012). The cumulative contribution of individual projects to the overall potential cumulative impact cannot be known. However, each operational facility can be expected to contribute incrementally to the injury and mortality of avian and bat species.

At this time, no feasible, effective mitigation measures have yet been developed that would lessen this potential adverse effect; however, the adaptive monitoring program within the Bird and Bat Conservation Strategy required by DF BIO-15, and the monitoring program outlined in DFs BIO-15 and BIO-25, set up a decision-making framework for reviewing, characterizing, and responding to mortality and injury monitoring findings. These features would provide a mechanism to characterize the overall magnitude of potential avian and bat impacts. Following the implementation of mitigation measures, however, it cannot be said with sufficient certainty that the threat of avian and bat impacts would be eliminated. Given the large number of proposed solar facilities under the cumulative scenario, construction monitoring results from the Genesis and Desert Sunlight facilities strongly indicate that ongoing, unmitigated risks will remain at most solar facilities. Thus, the cumulative impact to special-status and other birds and to special-status bats would remain.

Additionally, the Modified Project, as well as Alternative 2, in combination with other projects in the cumulative scenario would result in indirect cumulative impacts to bats, and migratory and nesting birds, including the loss of suitable foraging and nesting/roosting habitat. However, the implementation of DFs listed in Section 3.3.4, including DF BIO-15, which requires the development and implementation of a Bird and Bat Conservation Strategy, would reduce the indirect effects on bats, and migratory and nesting birds by the Modified Project and Alternative 2.

The Modified Project, as well as Alternative 2, in combination with other projects in the cumulative scenario would result in cumulative impacts on suitable habitat for bat and bird species. However, the area to be impacted under the Modified Project or Alternative represents a negligible percentage of the available foraging and nesting/roosting habitats in the area for bird and bat species.

Golden Eagle

The cumulative analysis for golden eagle considered the potential for project impacts to interact with impacts caused by present, and reasonably foreseeable future projects within 10 miles of the project site to cause or contribute to cumulative effects. The 10-mile radius is consistent with USFWS guidance for inventorying golden eagles that occur near a specific project (Pagel et al.,

2010). Based on a review of known and historic golden eagle breeding sites in the 10-mile golden eagle study buffer, none of the cumulative projects would impact golden eagle breeding sites. However, many of the projects are located or proposed within natural habitat that provides foraging opportunities for golden eagles. A GIS-based analysis identified 277,513 acres of potentially suitable golden eagle foraging habitat within 10 miles of the project site. Within that area, present and future projects including the Modified Project or Alternative 2 would impact 35,998 acres (13.0 percent) of this potential foraging habitat. The Modified Project would contribute 11.4 percent of the total projected cumulative impact and Alternative 2 would contribute 12.3 percent, as shown in Table 3.4-2.

Following USFWS guidance, the loss of potential golden eagle foraging habitat would be considered significant if losses occurred within 1.0 mile of an active nest. However, no active nests are known within 1.0 mile of the project and few if any nests are known near other projects considered in the cumulative scenario. Few (if any) impacts are anticipated to golden eagle nesting sites generally because this species tends to regionally nest in remote mountainous areas where no active projects are proposed.

The contribution of the Modified Project or Alternative 2 to impacts on golden eagles would be reduced through implementation of DF BIO-24, which requires the development and implementation of a Golden Eagle Monitoring and Adaptive Management Plan.

Western Burrowing Owl, Desert Kit Fox, and American Badger

As characterized by the NECO Plan (BLM, 2002), the Palo Verde watershed provides extensive habitat for western burrowing owl, American badger, and desert kit fox. While each species has its own specific habitat requirements, there is considerable overlap in the types of habitat used by these species. The cumulative analysis of effects to these species focused on potential habitat in the Palo Verde watershed, as mapped in the NECO Plan. A GIS-based analysis identified approximately 286,084 acres of potential habitat in the Palo Verde watershed. The development of present and reasonably foreseeable future projects would impact approximately 24,477 acres (8.6 percent) of potentially suitable habitat within this area that supports creosote bush scrub and unvegetated desert pavement; with the Modified Project contributing approximately 16.9 percent and Alternative 2 contributing approximately 18.1 percent of that total cumulative impact (Table 3.4-2).

The present and future projects implemented in undeveloped areas would presumably result in impacts to burrowing owl, American badger, and desert kit fox similar to the Modified Project or Alternative 2. Such effects include the direct loss of suitable habitat, loss of individual animals, or indirect effects from human presence that result in changes to habitat quality during construction, operation and maintenance, and decommissioning.

TABLE 3.4-2
CUMULATIVE IMPACTS RELATED TO WILDLIFE

Wildlife Species or Species Group (habitat affected)	Habitat within the Cumulative Study Area	Impacts of Present/Future Projects (% of total habitat)[a]	Impacts of Modified Project (% of total cumulative impact)	Impacts of Alternative 2 (% of total cumulative impact)
Desert tortoise *Eastern Colorado Recovery Unit*	2,600,000 acres	35,998 acres (1.4%)	4,070 acres (11.4%)	4,433 acres (12.3%)
Couch's spadefoot toad *BLM-identified habitat in the Palo Verde watershed as shown in NECO Plan*	314,564 acres	31,565.13 acres (10.0%)	0.13 acre (>0.01%)	0.13 acre (>0.01%)
Golden eagle (foraging only) *10-mile Project buffer*	277,513 acres	35,998 acres (13.0%)	4,070 acres (11.4%)	4,433 acres (12.3%)
Burrowing owl / Desert kit fox / American badger *BLM-identified habitat in the Palo Verde watershed (All NECO landforms except mountains, playa, badland, and lava flows)*	286,084 acres	24,477 acres (8.6%)	4,070 acres (16.9%)	4,433 acres (18.1%)

NOTE:
[a] Includes larger of Modified Project or Alternative 2 impacts.

SOURCE: Impact data based on cumulative project information in Tables 3.1-1 and 3.1-2 and shown in Figure 3.1-1.

3.4.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to biological resources, including wildlife, are identified in the ECCMP in Appendix 4 of the ROD for the Approved Project (Appendix B, p. B4-63 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to existing, approved mitigation measures are warranted. Specifically, BIO-21, which addresses impacts to Nelson's bighorn sheep that would not occur under the Modified Project or Alternative 2, is no longer necessary. Also, as described in Chapter 2 and Section 3.4.4, above, the Grant Holder has proposed to incorporate Mitigation Measures BIO-1 through BIO-20 and BIO-22 through BIO-28 as project DFs; therefore, these are not considered mitigation measures as understood in a NEPA context.

No additional feasible mitigation measures have been identified to further reduce the impacts of the Modified Project or Alternative 2.

TABLE 3.4-3
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR WILDLIFE RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
BIO-21	Not applicable; deleted.	Not applicable.
BIO-1 through BIO-20; BIO-22 through BIO-28	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

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3.5 Climate Change

This section describes and evaluates issues related to climate change for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS. Settings, methodology, and decisions that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2.

The BLM received scoping comments from the U.S. Environmental Protection Agency (USEPA) regarding climate change (see Appendix D). The USEPA requested that the Draft EIS consider how climate change could influence the project, specifically within sensitive areas, and that it assess how the projected impacts could be exacerbated by climate change. Impacts of climate change on the Modified Project and Alternative 2 are addressed in Sections 3.5.4.2 and 3.5.4.4, respectively. The USEPA also requested that the Draft EIS quantify and disclose the anticipated climate change benefits of solar energy compared to the greenhouse gas (GHG) emissions from different types of generating facilities, including solar, geothermal, natural gas, coal-burning, and nuclear. The benefits of the Modified Project are addressed below in Section 3.5.4.1.

3.5.1 Environmental Setting

For purposes of analyzing climate change impacts of the Modified Project and Alternative 2, the study area would be the same as that evaluated in the 2010 PA/FEIS. Section 3.3 of the 2010 PA/FEIS (Appendix A, p. 3.3-1 et seq.) describes the environmental context and framework for the BLM's analysis of climate change and GHG emissions relative to the Approved Project. This analysis of the Modified Project and Alternative 2 tiers to and relies on that discussion, with updates to describe changes in conditions that have occurred since publication of the 2010 PA/FEIS.

3.5.1.1 Greenhouse Gas Sources

Anthropogenic GHG emissions in the United States are derived mostly from the combustion of fossil fuels for transportation and power production. Energy-related carbon dioxide (CO_2) emissions, resulting from fossil fuel exploration and use, account for approximately three-quarters of the human-generated GHG emissions in the United States. More than half of the energy-related emissions come from large stationary sources such as power plants; approximately one-third are derived from transportation; and industrial processes, agriculture, forestry, other land uses, and waste management comprise a majority of the remaining sources (USEPA, 2012).

3.5.1.2 Existing GHG Emissions at the Project Site

No existing industrial, residential, or other facilities that emit GHGs from fossil fuel are permanently located or operating at the Modified Project site. The existing desert ecosystem on-site provides ongoing net natural carbon uptake. Wohlfahrt et al. (2008) completed an evaluation

of carbon uptake by a natural Mojave Desert ecosystem in Nevada. That study indicates that desert ecosystems may result in the uptake of carbon in amounts as high as 102 to 110 grams per square meter per year (g/m^2yr); however, the study showed a high degree of uncertainty regarding these amounts. Other studies have indicated lower carbon uptake amounts for desert habitats, including between 10 and 30 g/m^2yr, 46 g/m^2yr, 70 g/m^2yr, and 72 g/m^2yr (Schlesinger, et al, 2009). Given the high variability of carbon uptake amounts identified in the scientific literature, this analysis assumes that on-site ecosystems could uptake carbon at a rate of 63 g/m^2yr based on the average of the carbon uptake rates discussed above. Under existing conditions, this would equate to a natural rate of carbon uptake, expressed in CO_2, of approximately 0.93 metric tons of CO_2 per acre per year.

3.5.1.3 Statewide GHG Emission Inventory

Statewide emissions of GHG from relevant source categories for 2004 through 2010 are summarized in Table 3.5-1. Specific contributions from individual air basins such as the Mojave Desert Air Basin (MDAB) are included in the emissions inventory, but are not itemized by air basin. In 2010, California produced 451.6 million gross metric tons of CO_2 equivalent (CO_2e) emissions. Transportation was the source of 38 percent of the state's GHG emissions, followed by electricity generation at 21 percent, industrial sources at 19 percent, residential sources at 10 percent, and other sources comprising the remaining 12 percent (CARB, 2013a).

TABLE 3.5-1
CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2004	2005	2006	2007	2008	2009	2010
Transportation	183.5	186.3	187.0	187.4	178.2	173.3	173.2
Electric Power	116.3	108.9	105.6	115.0	121.2	103.6	93.3
Commercial and Residential	42.8	41.2	41.9	42.1	42.4	42.6	43.9
Industrial	97.0	96.0	94.3	91.9	94.3	83.6	86.0
Recycling and Waste	6.3	6.7	6.8	6.7	6.9	6.9	7.0
High Global Warming Potential	13.3	13.9	14.3	14.3	14.4	14.8	15.7
Agriculture	33.2	33.5	34.6	33.44	34.3	32.8	32.5
Forestry	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Gross Emissions	**492.6**	**486.7**	**484.4**	**490.9**	**491.9**	**457.8**	**451.6**

SOURCE: California Air Resources Board (CARB), 2013a.

3.5.2 Applicable Laws, Regulations, Plans, and Standards

Climate change-specific laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and Alternative 2 relies on those summaries except as supplemented or updated below.

3.5.2.1 Federal

Specific GHG-related regulations that the USEPA has adopted to date are as follows:

40 CFR Part 98: Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities in nine industrial sectors that emit more than 25,000 metric tons of CO_2e emissions per year (USEPA, 2013). Power plants are one of the nine industrial sectors identified in the rule. However, for the purposes of this rule, the power plant sector consists of facilities that produce electricity by combusting fossil fuels and/or biomass. The emissions from this sector are solely from stationary fuel combustion sources such as boilers, simple and combined-cycle combustion turbines, engines, and incinerators. The Modified Project would generate power from PV solar panels (i.e., not combustion of fossil fuels); therefore, it would not be subject to the rule.

40 CFR Parts 50, 52, 70 and 71: Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. The rule establishes an approach for addressing GHG emissions from stationary sources regulated under the Prevention of Significant Deterioration [PSD] and Title V operating permit programs. The rule "tailors" the thresholds for GHG emissions at much higher levels than criteria air pollutants and presents a phased approach for implementation, ultimately covering facilities responsible for 70 percent of national GHG emissions from stationary sources. Step 2 of the rule, which phased in by June 30, 2013, mandates that PSD permitting requirements cover new projects with CO_2e emissions of at least 100,000 tons per year, and that Title V operating permits apply to facilities that emit at least 100,000 tons per year of GHG emissions (Government Printing Office, 2012). As addressed in Sections 3.5.4.1 and 3.5.4.3, the potential CO_2e emissions from the Modified Project and Alternative 2 would be less than 100,000 tons per year; therefore, this rule would not apply to the Modified Project or Alternative 2.

3.5.2.2 State

Sections 95350 to 95359, Title 17, California Code of Regulations

The purpose of this regulation is to achieve GHG emission reductions by reducing sulfur hexafluoride (SF_6) emissions from gas-insulated switchgears, such as circuit breakers, that would likely be required at the proposed switchyard. Owners of such switchgear must not exceed maximum allowable annual emissions rates, which are reduced each year until 2020, after which annual emissions must not exceed 1.0 percent. They must regularly inventory gas-insulated switchgear equipment, measure quantities of SF_6, and maintain the records for at least 3 years. Additionally, the regulation requires that by June 1 of each year, each owner of gas-insulated switchgears must submit an annual report to the California Air Resources Board (CARB)'s Executive Officer for emissions that occurred during the previous calendar year.

AB 32 and Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations (CARB, 2008). CARB's Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons, or approximately 28.4 percent, from the state's projected 2020 emissions level of 596 million metric tons of CO_2e under a business as usual scenario. In August 2011, the Scoping Plan was re-approved by CARB's Board. A draft update to the Scoping Plan has recently been developed by CARB to

address the requirement by AB 32 that the Scoping Plan be updated at least every five years. The discussion draft of the Update AB 32 Scoping Plan was released for public comment on October 1, 2013 (CARB, 2013b).

3.5.3 Analytical Methodology

3.5.3.1 GHG Emissions Estimates

This analysis of the potential GHG-related impacts that would result under the Modified Project is based on technical information prepared by AECOM for the Grant Holder (AECOM, 2013), which was independently reviewed by the BLM's environmental consultant and BLM staff. The AECOM report identifies and quantifies criteria air pollutants, toxic air contaminants (TACs), and GHGs from the Modified Project. Emission calculations in the AECOM report are based on specific equipment and material throughput data provided by the Grant Holder, as well as emission factors from the following sources:

1. CARB's OFFROAD2007 model for off-road vehicles and equipment; and
2. CARB's EMFAC2011 model for on-road vehicles.

As noted, the assumptions, GHG emission factors, calculations, and other data in the AECOM report were independently reviewed by the EIS authors and were determined to be acceptable for incorporation in this analysis. The procedures used to estimate GHG emissions were substantially the same as those used to estimate criteria pollutant emissions. Rather than repeat the information here, the reader is referred to Section 3.2.3, Analytical Methodology, of this EIS regarding air resources, for a detailed discussion of how criteria pollutant and GHG emissions were estimated.

The analysis considers detailed information about how the potential construction-, operation and maintenance-, and decommissioning-related activities associated with the Modified Project and Alternative 2 would result in the creation of GHG emissions that could contribute to climate change. This EIS considers the incremental impact of the Modified Project and Alternative 2 emissions as a possible contributor, together with the incremental impacts of other past, present, and reasonably foreseeable actions, to cause global climate change, which intrinsically is a cumulative issue. The potential for the Modified Project or Alternative 2 to reduce GHG emissions by replacing fossil fuel electricity generation with renewable energy generation is also considered.

3.5.3.2 Carbon Sequestration

The rate of existing carbon sequestration that occurs at the Modified Project site has been estimated by the EIS authors under the assumption that the ongoing natural carbon uptake by the desert ecosystem is equivalent to 0.93 metric tons of CO_2 per acre per year (see Existing GHG Emissions at the Project Site, under Section 3.5.1.2 of this EIS). This rate of carbon uptake is based on studies of Mojave Desert ecosystem (Wohlfahrt et al., 2008 and Schlesinger, et al., 2009). The acreage of the desert ecosystem that would be disturbed by the Modified Project and Alternative 2 were obtained from Section 3.3, Biological Resources - Vegetation.

3.5.3.3 Fossil Fuel-Based Energy Displacement

The reduction in GHG emissions by electricity displacement was estimated by the EIS authors by assuming that the solar power would displace electricity generated by dispatchable natural-gas fired combined-cycle power plants and that the Modified Project would have a generation capacity factor of 26 percent for an average daily generation period of approximately 6 hours. A natural gas heat rate of 6,940 British thermal units per kilowatt hour (BTU/kWh) for energy generation by combined-cycle power plants and emission factors from The Climate Registry were used to estimate the displaced emissions.

3.5.3.4 Impact Analysis

Independent of NEPA, but pursuant to 40 CFR Part 98, Mandatory Reporting of Greenhouse Gases Rule, the USEPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year (USEPA, 2013). In addition, pursuant to 40 CFR Part 52, Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, USEPA mandates applying PSD and Title V requirements to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year (Government Printing Office, 2012). For the purposes of this analysis, estimated net GHG emissions for the Modified Project and Alternative 2 are compared to the federal GHG mandatory emissions reporting threshold of 25,000 metric tons per year to determine whether the GHG emissions could contribute substantially to global climate change.

3.5.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none specifically address climate change.

3.5.5 Environmental Consequences

3.5.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted) on Climate Change

Construction

Construction of industrial facilities such as power plants requires coordination of numerous equipment and personnel. The estimated 48-month construction period for the Modified Project would require on-site construction activities that would result in short-term increases in GHG emissions from vehicle and equipment operation. The GHG emissions estimates for the entire construction period and normalized for a one-year period are shown in Table 3.5-2. As indicated in the table, normalized annual GHG emissions associated with the Modified Project would be less than the federal GHG mandatory emissions reporting threshold of 25,000 metric tons per year. Therefore, GHG construction emissions that would be associated with the Modified Project would not be expected to contribute substantially to global climate change.

TABLE 3.5-2
MODIFIED PROJECT CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS

Construction Element	CO_2e (metric tons)[a,b]
On-Site Construction Equipment	5,756
On-Site Motor Vehicles	678
Off-Site Motor Vehicles	48,181
Construction Total	**54,615**
Total Normalized for a One-year Period	**13,654**

NOTES:
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms
[b] The vast majority of the CO_2e emissions, over 99 percent, is CO_2 from these combustion sources.

SOURCE: AECOM, 2013.

Operation and Maintenance

Direct and Indirect Emissions

GHG emissions associated with electricity generation tend to be dominated by CO_2 emissions from carbon-based fuels. For this solar PV project, solar energy would be produced nearly GHG-free. Anticipated annual operational GHG emissions for the Modified Project are shown in Table 3.5-3. The Modified Project would emit approximately 126 metric tons of CO_2e per year. As a renewable energy generation facility, the Modified Project would comply with GHG emission performance standard requirements of SB 1368 (Chapter 11, GHG Emission Performance Standard, Article 1, Section 2903(b)(1)). The Modified Project would have an estimated GHG emission rate of 0.00014 metric tons CO_2e/megawatt-hour (MWh), which would be well below the GHG emission performance standard of 0.500 metric tons CO_2e/MWh.

TABLE 3.5-3
MODIFIED PROJECT OPERATION AND MAINTENANCE GREENHOUSE GAS EMISSIONS

Operational Element Emission Source	CO_2e (metric tons)[a,b]
Off-Road Equipment	6
On-Site Motor Vehicles	17
Worker Commute Vehicles	93
Other Off-Site Vehicles (e.g., Vendor Trips)	10
Operational Total	**126**
Facility CO_2e Emission Rate (metric tons/MWh)[c]	0.0001

NOTES:
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms
[b] The vast majority of the CO_2e emissions, over 99 percent, is CO_2 from these combustion sources.
[c] Based on MWh annual production rate of 1,104,636 MWh/year.

SOURCE: AECOM, 2013.

Carbon Sequestration

In addition to direct and indirect emissions of GHGs, the Modified Project would result in the removal of up to approximately 4,070 acres of vegetation. This would reduce the ongoing natural carbon uptake by the desert ecosystem. Recent studies of southwestern U.S. desert ecosystems indicate that the desert uptakes carbon in amounts equivalent to 0.93 metric tons of CO_2 per acre per year (see Existing Greenhouse Gas Emissions at the Project Site, under Section 3.5.1.2). Based on this assumption, the maximum carbon uptake expressed as CO_2 that would be eliminated as a result of ground disturbance under the Modified Project would be about 3,785 metric tons of CO_2 per year (ESA, 2013).

Displacement of GHG Emissions

It is estimated that the Modified Project would generate approximately 1,104,636 MWh of power per year, with a GHG emission rate of 0.00011 metric tons CO_2e per MWh. The power produced by the Modified Project would offset power production by dispatchable fossil-based power plants, which can have a GHG production rate in the range of 0.35 to 1.00 metric tons CO_2e per MWh. The electric power produced by the Modified Project would be transferred to California's power grid, and would be used preferentially over conventional power generation from fossil fuels, including natural gas combined cycle plants, natural gas single-cycle peaking plants, and power imported from other states, which could include power from coal-fired plants. Therefore, the Modified Project would provide a direct benefit related to climate change – namely offsetting up to approximately 1,104,636 MWh/year of CO_2 emitting power derived from existing/conventional fossil fuel power plants. Some loss of power is likely to occur between the project and the end user due to transmission line losses; however, the distance power from the BSPP would travel to end users is not known. Additionally, the fossil fuel-based power that would be offset by power from the project would be subject to similar or perhaps greater transmission losses, in particular for power traveling from coal-fired plants out of state. The estimated reduction in GHG emissions by electricity displacement assumed that the solar power from the project would displace electricity generated by dispatchable natural-gas fired combined-cycle power plants. Therefore, implementation of Modified Project would displace an estimated 399,835 metric tons CO_2e annually (ESA, 2013).

Impact Summary

As shown in Table 3.5-4, the long-term sum of annual GHG emissions generated during operation and maintenance under the Modified Project (including direct and indirect emissions) combined with the CO_2 emissions that would not be sequestered would be up to 3,911 metric tons CO_2e per year. This amount would be below the federal GHG mandatory emissions reporting threshold of 25,000 metric tons.

If full build-out of the Modified Project were to displace existing electricity from natural gas-fired combined-cycle power plants, the Modified Project would displace over 399,835 metric tons of CO_2e annually (see above), resulting in a net beneficial reduction of over 395,924 metric tons CO_2e per year.

TABLE 3.5-4
MODIFIED PROJECT TOTAL ANNUAL LONG-TERM GHG EMISSIONS

Emission Sources	Annual CO_2e Emissions (metric tons)
Direct and Indirect Annual Operation Emissions	126
CO_2 lost from Carbon Sequestration	3,785
Total Annual Operation	**3, 911**
Federal Reporting Threshold	25,000
Exceeds Threshold?	No

SOURCES: AECOM, 2013; ESA 2013

Closure and Decommissioning

Closure and decommissioning-related activities would emit GHG emissions when the facility is dismantled and the site is restored. Anticipated emissions sources would stem from the operation of construction equipment and motor vehicles. These emissions would occur over a one-time, limited-duration event. The amount of GHG emissions generated during closure and decommissioning of the Modified Project are assumed to be similar to, but lower in magnitude than, those generated during construction.

3.5.5.2 Direct and Indirect Effects of Climate Change on Alternative 1 (Proposed Modification Granted)

Because the estimates environmental changes that are anticipated to occur as a result of climate change have not changed since publication of the 2010 PA/FEIS, the direct and indirect effects of climate change on the Modified Project would be substantially the same as disclosed for the Approved Project. See Section 4.3.3 of the 2010 PA/FEIS (Appendix A, pp. 4.3-3 through 4.3-10).

3.5.5.3 Direct and Indirect Effects of Alternative 2 (No Action Alternative) on Climate Change

Construction

Under Alternative 2, a project using solar thermal parabolic trough technology could be developed at the site at a scale approximately 65 percent of the Approved Project. It is assumed that a solar power plant under this alternative would incorporate the same construction techniques and methods that would have occurred under the Approved Project, but, instead of lasting for 69 months, construction under Alternative 2 would last for approximately 48 months – the same as the Modified Project. Based on the size of the solar plant site, total construction emissions under Alternative 2 are estimated to be approximately 65 percent of those estimated for the Approved Project (see Appendix A, p. 4.3-3). The GHG emissions estimates for Alternative 2 for the entire construction period and normalized for a one-year period are shown in Table 3.5-5. As indicated in the table, normalized annual GHG emissions associated with Alternative 2 would be less than the federal GHG mandatory emissions reporting threshold of 25,000 metric tons per year. Therefore, GHG construction emissions associated with Alternative 2 would not be expected to contribute substantially to global climate change.

TABLE 3.5-5
ALTERNATIVE 2 CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS

Construction Element	CO2e(metric tons)[a,b,c]
On-Site Construction Equipment	45,955
On-Site Motor Vehicles	1,170
Off-Site Motor Vehicles	20,410
Construction Total	**67,535**
Total Normalized for a One-year Period	**18,009**

NOTES:
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms
[b] The vast majority of the CO_2e emissions, over 99 percent, is CO_2 from these combustion sources.
[c] Construction GHG emissions are based on Blythe Solar Power Project emissions (see PA/FEIS Section 4.3; Appendix A, p. 4.3-3), modified by the ratio of energy output for Alternative 2 to the output for the Approved Project (i.e., 65 percent).

SOURCE: Based on PA/FEIS (Appendix A, p. 4.3-3).\

Operation and Maintenance

Direct and Indirect Emissions

The solar thermal parabolic trough technology that could be used under Alternative 2 results in the generation of more GHG emissions per unit of energy compared to the solar PV technology that would be used under the Modified Project. Anticipated annual operational GHG emissions that would be associated with Alternative 2 are shown in Table 3.5-6. Operation and maintenance of Alternative 2 could result in the generation of approximately 9,613 metric tons of CO_2e per year. As a renewable energy generation facility, Alternative 2 would comply with performance standard requirements of SB 1368 for GHG emissions and would have an estimated GHG emission rate of 0.007 metric tons CO_2e/MWh, which would be well below the GHG emission performance standard of 0.500 metric tons CO_2e/MWh.

TABLE 3.5-6
ALTERNATIVE 2 OPERATION AND MAINTENANCE GREENHOUSE GAS EMISSIONS

Operational Element Emission Source	CO_2e (metric tons)[a,b,c]
Auxiliary Boilers	8,351
Emergency Generators	188
Fire Pumps	20
Maintenance Vehicles	147
Delivery Vehicles	107
Employee Vehicles	785
Equipment Leakage	16
Operational Total	9,613
Facility GHG Emission Rate (MTCO2e/MWh)	0.0070

NOTES:
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms
[b] The vast majority of the CO_2e emissions, over 99 percent, is CO_2 from these combustion sources.
[c] Operation and Maintenance GHG emissions are based on Blythe Solar Power Project emissions (see PA/FEIS Section 4.3; Appendix A, p. 4.3-4), modified by the ratio of energy output for Alternative 2 to the output for the Approved Project (i.e., 65 percent).
[d] Based on MWh annual production rate of 1,365,000 MWh/year.

SOURCE: Based on PA/FEIS (Appendix A, p. 4.3-3).

Carbon Sequestration

Alternative 2 would result in the clearing of land and complete removal of vegetation over an area of approximately 4,433 acres. This would reduce the ongoing natural carbon uptake by the desert ecosystem. Desert uptake of carbon is assumed to be equivalent to 0.93 metric tons of CO_2 per acre per year (see Existing Greenhouse Gas Emissions at the Project Site, under Section 3.5.1.2). Under this assumption, the maximum carbon uptake expressed as CO_2 that would be eliminated as a result of ground disturbance under Alternative 2 would be about 4,123 metric tons of CO_2 per year (ESA, 2013).

Displacement of GHG Emissions

Alternative 2 would generate approximately 1,365,000 MWh of power per year, with a GHG emission rate of 0.007 metric tons CO_2e per MWh. The power produced by Alternative 2 would offset power production by dispatchable fossil-based power plants, which can have a GHG production rate in the range of 0.35 to 1.00 metric tons CO_2e per MWh. The electric power produced by Alternative 2 would be transferred to California's power grid, and would be used to substitute for conventional fossil fuel based power generation. Therefore, Alternative 2 would offset up to approximately 1,365,000 MWh/year of CO_2 emitting power derived from existing/conventional fossil fuel power plants. The estimated reduction in GHG emissions by electricity displacement assumed that the solar power would displace electricity generated by dispatchable natural-gas fired combined-cycle power plants. If Alternative 2 produced the renewable energy that would displace gas-fired generation, implementation of Alternative 2 would displace an estimated 494,077 metric tons CO_2e annually. This amount is more than 94,241 additional metric tons CO_2e than would be displaced under the Modified Project (ESA, 2013).

Impact Summary

Table 3.5-7 shows the sum of annual long-term direct and indirect GHG emissions generated under Alterative 2 during operation and maintenance plus the CO_2 emissions that would not be sequestered. That amount would be up to 13,736 metric tons CO_2e per year, which would be below the federal GHG mandatory emissions reporting threshold of 25,000 metric tons.

TABLE 3.5-7
ALTERNATIVE 2 TOTAL ANNUAL LONG-TERM GHG EMISSIONS

Emission Sources	Annual CO_2e Emissions (metric tons)
Direct and Indirect Annual Operation Emissions	9,613
CO_2 lost from Carbon Sequestration	4,123
Total Annual Operation	**13,736**
Federal Reporting Threshold	25,000
Exceeds Threshold?	No

SOURCES: AECOM, 2013, ESA 2013

In addition, if full build-out of Alternative 2 were to take place, Alternative 2 would displace over 494,077 metric tons of CO_2e annually stemming from electricity production in natural gas-fired combined-cycle power plants (see above). The result would be a net reduction of over 480,341 metric tons CO_2e per year that exceeds the net reduction under the Modified Project by 84,417 metric tons CO_2e per year. This outcome would be a beneficial impact.

Closure and Decommissioning

Closure and decommissioning-related activities would emit GHGs when the facility is dismantled and the site is restored. Anticipated emissions would be caused by the operation of construction equipment and motor vehicles. These emissions would be generated during a one-time, limited-duration event. The type of GHG emissions generated during closure and decommissioning are assumed to be similar to, but lower than, those generated during construction of Alternative 2.

3.5.5.4 Direct and Indirect Effects of Climate Change on Alternative 2 (No Action Alternative)

Because the estimates of environmental changes anticipated to occur as a result of climate change have not changed since publication of the 2010 PA/FEIS, the direct and indirect effects of climate change on Alternative 2 would be substantially the same as disclosed for the Approved Project. See Section 4.3.3 of the 2010 PA/FEIS (Appendix A, pp. 4.3-3 through 4.3-10).

3.5.5.5 Cumulative Effects

GHG Emissions

GHG emissions are inherently a cumulative concern because the accumulation of GHG emissions in the atmosphere around the Earth results in global climate change. Therefore, the geographic scope of cumulative impacts related to GHG emissions and climate change is global, and the temporal scope is from the beginning of construction to the end of the 30-year term of the BLM ROW grant. The Modified Project or Alternative 2 would result in a short-term spike in GHG emissions compared to existing conditions on the project site during construction and decommissioning, and limited long-term GHG emissions during operations and maintenance. In addition, the Modified Project or Alternative 2 would result in reduced carbon sequestration in soils and vegetation due to enduring disturbance of the desert ecosystem. However, the Modified Project or Alternative 2 would result in a long-term net reduction of metric tons of CO_2e per year by displacing electricity from fossil fuel-fired power plants. This outcome would not conflict with the state's GHG reduction goals. All existing/approved and reasonably foreseeable projects identified in Tables 3.1-1 and 3.1-2 could contribute to global climate change due to the generation of short-term and/or long-term GHG emissions. However, similar to the Modified Project and Alternative 2, most of the existing/approved and reasonably foreseeable projects in these tables are renewable energy projects that could result in long-term decreases in GHG emissions by displacing electricity from fossil fuel-fired power plants.

Climate Change Impact on the Project

Climate change, which itself is a cumulative impact associated with the global increase of GHG emissions, may result in a suite of changes affecting the natural environment in a manner that is relevant to the Modified Project and Alternative 2. The climate change impacts on the Modified Project or Alternative 2 described in Section 4.3.3 of the 2010 PA/FEIS (Appendix A, pp. 4.3-3 through 4.3-10) would be the result of cumulative contributions to global GHG emissions over roughly the 30-year term of the BLM ROW grant.

3.5.5.6 Mitigation Measures

Mitigation measures are not needed to reduce GHG emissions. This conclusion is substantiated because the Modified Project or Alternative 2 would generate a minimal amount of direct GHG emissions and would indirectly reduce GHG emissions by eliminating GHGs produced by fossil-fueled energy generation. Implementation of the mitigation measures identified in Section 3.2.5.4, regarding Air Resources, could further reduce GHG emissions. Because no mitigation measures are recommended to address climate change-related effects, residual direct and indirect impacts would be the same as described in Sections 3.5.5.1 Section 3.5.5.2 for the Modified Project and, for Alternative 2, the same as described in Sections 3.5.5.3. Residual cumulative effects would be the same as described in Section 3.5.5.5.

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3.6 Cultural Resources

This section describes and evaluates the potential impacts of the Modified Project (Alternative 1) and Alternative 2 on cultural resources. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those applicable to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received scoping comments requesting that the Draft EIS address potential impacts to historic and prehistoric sites and Indian sacred sites in its analysis of cultural resources and that it describe the consultation processes undertaken to address potential impacts to cultural resources (see Appendix D).

3.6.1 Environmental Setting

Section 3.4 of the 2010 PA/FEIS (Appendix A, p. 3.4-1 et seq.) describes the environmental context for the BLM's analysis of potential effects to prehistoric, ethnographic, and historic resources relative to the Approved Project, including information about the geologic landforms in the vicinity of the project site at key times, dominant geomorphic features, and paleoclimate characteristics. It also provides prehistoric background information; regional ethnographic background information regarding the historic Native American groups that occupied or used the region; and historical background information regarding the Colorado Desert area generally and, more specifically, the lower Colorado River region.

For purposes of analyzing the cultural resources impacts associated with the Modified Project, the study area is substantially the same, but smaller in size than the area evaluated in the 2010 PA/FEIS and, because the environmental context has not changed since publication of the 2010 PA/FEIS or the 2010 ROD, that discussion has not been supplemented except as noted below.

The definition of the Area of Potential Effects (APE) has not changed since the publication of the 2010 PA/FEIS, except to the extent that the project boundaries have changed. In brief, the APE for direct impacts is defined as the area included within the ROW grant for the solar energy generating plant and associated facilities, roads, and transmission lines. The APE for indirect effects includes the right-of-way grant plus a 0.5-mile radius for built environment resources, and a 15-mile radius for cultural resources identified during consultation. The APE is described in detail in the Programmatic Agreement, which is included as an appendix to the 2010 ROD (Appendix B, p. B3-1 et seq.).

This analysis does not consider cultural resources located within the approved linear corridors, as impacts to these resources have already been evaluated in the 2010 PA/FEIS. For the purpose of this analysis, "Modified Project site" refers to the solar site of the Modified Project only. A total of 99 archaeological sites have been identified within the Modified Project site. Of these, only 15

have been evaluated and determined not eligible for listing in the National Register of Historic Places (NRHP). The other 84 sites remain unevaluated. Because the Approved Project was being implemented in phases (Phases 1A, 1B, and 2), evaluations of eligibility to the NRHP also were phased, in accordance with the Programmatic Agreement that was executed for the BSPP by the BLM in consultation with the California State Historic Preservation Officer (SHPO), Indian tribes, and other interested parties. The evaluations for Phase 1A have been completed, resulting in determinations of ineligibility for 15 sites, as discussed above. The evaluations for Phase 1B and Phase 2 have not been completed, and BLM has yet to make formal determinations of eligibility for the 84 sites located in these phases. Final determinations for the remaining 84 sites located within the Modified Project site will be made in accordance with the Programmatic Agreement that has been developed for the BSPP. Table E-1 (Appendix E) provides a summary of the archaeological resources that are located within the Modified Project.

The 2010 PA/FEIS identified several potential cultural landscapes (Prehistoric Trails Network Cultural Landscape [PTNCL] and Desert Training Center Cultural Landscape [DTCCL]) and one archaeological district (Prehistoric Quarries Archaeological District [PQAD]) within the vicinity of the project; however, these have not been completely defined or formally evaluated for NRHP eligibility. Further research would be needed to determine their boundaries, periods of significance, and contributing resources.

Since the publication of the 2010 PA/FEIS, a number of built environment and other cultural resources within the indirect effects APE have been identified through consultation. Built environment resources identified through consultation, as listed in Section II of the Programmatic Agreement include:

a) Blythe Airport

b) Interstate Highway 10

c) The Atchison, Topeka and Santa Fe Railroad

d) A segment of the Parker Headgate Rock-Blythe 161KV transmission line

Other cultural resources include:

a) The Desert Training Center California-Arizona Maneuver Area (DTC/C-AMA).

b) Cultural resources in the Mule Mountains Area of Critical Environmental Concern (ACEC)

c) The Bradshaw Trail and numerous, wide-spread, previously recorded, prehistoric trail segments

d) Historic properties or cultural resources identified through archaeological or other field investigations for this project that, as a result of project redesign to avoid direct effects to cultural resources, are no longer within the project area

e) Black Rock (a geological feature)

f) McCoy Spring

Since the publication of the 2010 PA/FEIS, BLM has conducted an ethnographic assessment and Traditional Cultural Property (TCP) assessment for the McCoy Solar Energy Project (MSEP), which is located north of and adjacent to the Modified Project. Given the proximity of the MSEP site to the BSPP site, these assessments are relied upon to the extent they inform the analysis of the Modified Project and Alternative 2. The purpose of the studies was to identify Tribal places of significance with regard to cultural, spiritual, and traditional practices that may be affected by the MSEP (AECOM, 2013). The ethnographic assessment study area included the MSEP area as well as the surrounding area within the viewshed of the MSEP, based on the surrounding topography and existing lines of sight. The ethnographic assessment consisted of archival and literature searches, field visits, and interviews with six Mohave and Chemeheuvi elders associated with the Colorado River Indian Tribes (CRIT) and five additional Mohave individuals. The ethnographic assessment resulted in the identification of 12 places of traditional cultural and religious importance, including:

a) The California desert to the eastern base of Palo Verde Mesa

b) Prehistoric archaeological site CA-RIV-10222

c) Cobble/pebble terraces (Prehistoric archaeological sites CA-RIV-3419 and CA-RIV-2846)

d) Coco-Maricopa Trail (CA-RIV-53T)

e) Giant’s Footprint

f) Mule Mountains Complex

g) Petroglyph Site (“McCoy Tinaja”)

h) Prehistoric Seasonal Villages

i) Salt Song Trail, Thumahnmp, and other Songscapes

j) Sun Viewing Location

k) Unnamed Geoglyph

l) Unnamed North/South Trails

Of these resources, three (CA-RIV-10222, Cobble/Pebble Terraces [archaeological sites CA-RIV-3419 and CA-RIV-2846], and the Coco-Maricopa Trail), have been formally evaluated and determined eligible for listing in the NRHP. The other nine resources have not been evaluated. All of these places of traditional and cultural importance are located within the APE for indirect effects for the Modified Project.

Further documentation of the McCoy Tinaja petroglyph site was conducted in November, 2013 (Weidlich and Warren, 2013). The site consists of 63 petroglyph features, numerous rock features, three trail segments, and a tinaja, which is a naturally-occurring geological feature consisting of a pocket in bedrock where water can occasionally pool. The petroglyph site has been preliminarily documented (Weidlich and Warren, 2013), but has not been formally evaluated for its eligibility for listing in the NRHP.

3.6.2 Applicable Laws, Regulations, Plans, and Standards

General and cultural resource-specific laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (see Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project relies on those summaries except as supplemented below.

3.6.2.1 State

Native American Heritage Commission

Section 5097.91 of the California Public Resources Code established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the Public Resources Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

The NAHC has jurisdiction and special expertise, as a state agency, over Native American resources within and in the vicinity of the approved site, including archeological places of religious significance to Native Americans and to Native American burial sites.

3.6.3 Analytical Methodology

Section 4.4.1 and Appendix D of the 2010 PA/FEIS (Appendix A, p. 4.4-1 et seq.; p. AD-1 et seq.) describe the impact assessment methodology relied upon to analyze the impacts of the Approved Project. The impact methodology remains valid and has been tiered to and relied upon in this analysis of the Modified Project.

Since the publication of the 2010 PA/FEIS, several studies and documents have been prepared in accordance with the existing Programmatic Agreement. Pursuant to the Programmatic Agreement, significance evaluations for archaeological sites located within Phase 1A of the Approved Project were conducted (Tennyson and Apple, 2010) and a Historic Properties Treatment Plan (HPTP) was prepared for Phase 1A. Significance evaluations were underway for Phase 1B of the Approved Project at the time that the original project owner filed for bankruptcy, and have not been finalized.

In addition, government-to-government tribal consultation has continued since the Grant Holder submitted the Level 3 Variance request. Consultation efforts since that time are detailed in Chapter 4, Consultation and Coordination; however, a brief summary is provided here.

The BLM invited the Indian tribes who had participated in government-to-government consultation for the Approved Project to consult regarding the Modified Project by letter dated June 26, 2013, which included an invitation to a general information meeting and site visit held on July 23, 2013. The draft Programmatic Agreement Amendment was sent to all Consulting Parties to the Agreement, including the tribes, for review on July 19, 2013. The BLM also held government-to-government consultation meetings with the Colorado River Indian Tribes and the

Quechan Tribe regarding the project. Consultation with tribes to identify any additional resources of tribal cultural or religious significance is ongoing.

3.6.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to cultural resources:

CUL-1, Prehistoric Trails Network Cultural Landscape Documentation and Possible NRHP Nomination, requires the Grant Holder to contribute to a fund to finance the completion of the PTNCL Documentation and Possible NRHP Nomination program. It also describes procedures in the event that the project is not certified or completed.

CUL-2, Desert Training Center California-Arizona Maneuver Area Cultural Landscape Documentation and Possible NRHP Nomination, requires the Grant Holder to contribute to a fund to finance the completion of the Documentation and Possible NRHP Nomination program. It also provides details of contribution amounts and procedures in the event that the project is not certified or completed.

CUL-3, Cultural Resources Personnel, requires the Grant Holder to obtain the services of a Cultural Resources Specialist (CRS), Technical Specialists, Project Prehistoric Archaeologist (PPA), Project Historical Archaeologist (PHA), and other identified staff prior to the start of any ground disturbance activities, and outlines the required qualifications and responsibilities of selected staff.

CUL-4, Project Documents for Cultural Resources Personnel, requires the Grant Holder to provide the CRS and other cultural resources staff with all documentation, maps, design plans, and other materials needed to identify, document, and monitor existing or potential cultural resource features, and identifies the responsibilities of the CRS throughout the entirety of the project.

CUL-5, Cultural Resources Monitoring and Mitigation Plan, identifies the requirements of the Cultural Resources Monitoring and Mitigation Plan (CRMMP), which must be submitted to the CRS prior to the start of ground disturbance, and specifies that no ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the Construction Project Manager.

CUL-6, Prehistoric Quarries Archaeological District Data Recovery and District Nomination, requires the Grant Holder to ensure that the CRMMP includes a PQAD evaluation and data recovery plan prior to the start of ground disturbance, and also outlines the requirements of that plan.

CUL-7, Data Recovery for Small Prehistoric Sites (Lithic Scatters, Cairns, and Pot Drops), requires the Grant Holder to ensure that the CRMMP includes a data recovery plan for small prehistoric sites. It also outlines what information must be included in the data recovery plan, and requires the data recovery plan to follow California Archaeological Resources Identification and Data Acquisition Program (CARIDAP) protocol.

CUL-8, Data Recovery on Historic-Period Sites with Features, requires the Grant Holder to ensure that the CRMMP includes a data recovery plan for historic-period archaeological sites with features, and outlines what information must be included in the data recovery plan, as well as procedures for implementation.

CUL-9, Data Recovery on Historic-Period Sites with Structures, requires the Grant Holder to ensure that the CRMMP includes a data recovery plan for historic-period archaeological sites with structures, and outlines what information must be included in the data recovery plan, as well as procedures for implementation.

CUL-10, Data Recovery on Historic-Period Dump Sites, requires the Grant Holder to ensure that the CRMMP includes a data recovery plan for historic-period dump sites, and outlines what information must be included in the data recovery plan, as well as procedures for implementation.

CUL-11, Data Recovery on Historic-Period Refuse Sites, requires the Grant Holder to ensure that the CRMMP includes a data recovery plan for historic-period refuse sites, and outlines what information the data recovery plan shall include, as well as procedures for implementation.

CUL-12, Data Recovery on Historic-Period Roads, requires the Grant Holder to ensure that a qualified architectural historian conducts research and writes a report on the age and use of two unimproved historic-period roads (SMB-H-600 and SMB-H-601). It also outlines specific research areas of focus, as well as procedures for report distribution.

CUL-13, Archival Research on Blythe Army Air Base Reservoir Pipelines, requires the Grant Holder to ensure that a qualified architectural historian conducts research to establish the current existence and locations of the water supply pipelines that connect the Blythe Army Air Base Reservoir pipelines to the former Blythe Army Air Base. It also outlines other responsibilities of the Grant Holder throughout the research process, as well as procedures for report distribution.

CUL-14, Archival Research on Radio Communications Facility, requires the Grant Holder to ensure that a qualified architectural historian conducts research to evaluate the CRHR eligibility of the radio communications facility, considering all pertinent register criteria, as well as integrity, and requires the Grant Holder to propose ways to avoid or mitigate impacts.

CUL-15, Worker Environmental Awareness Program (WEAP), requires the Grant Holder to provide WEAP training to all new workers within their first week of employment prior to and for the duration of ground disturbance, and outlines program material, staff responsibilities, and procedures for implementation.

CUL-16, Construction Monitoring Program, requires that the Grant Holder and CPM ensure that the CRS, alternate CRS, or CRMs monitor the indicated types of ground disturbances full time to prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

CUL-17, Authority To Halt Construction; Treatment of Discoveries, directs the Grant Holder to grant authority to halt ground disturbance to the CRS, alternate CRS, PPA, PHA,

and the CRMs in the event of a discovery, and outlines procedures and responsibilities of the party authorizing and implementing the halt.

CUL-18, Cultural Resources Report (CRR), outlines what information the final CRR shall include, to whom it shall be submitted, as well as other procedural and compliance-related information.

CUL-19, Compliance with BLM Programmatic Agreement, indicates that if provisions in the Programmatic Agreement and associated implementation and monitoring programs conflict with or duplicate proposed design features, the BLM provisions shall take precedence.

3.6.5 Environmental Consequences

3.6.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Ground-disturbing construction activities associated with the Modified Project could directly impact cultural resources by damaging and displacing artifacts, diminishing site integrity and altering the characteristics that make the resources significant. In addition, in the case of historic architectural resources and places of traditional cultural importance, impacts can occur to the setting of a resource even if the resource is not physically damaged. Indirect effects are caused by the action and are later in time or farther removed in distance. Indirect effects to cultural resources could include visual, auditory, and atmospheric effects, as well as disturbances to resources caused by erosion or by an increased number of visitors to the site (i.e., construction workers and long-term employees). Indirect effects to historic properties could also result from a change in the historic setting of the properties.

Construction of the Modified Project would include multiple types of grading, which vary in the degree of disturbance created. For the placement of solar module foundations, underground electric lines, inverter and transformer pads, roads and access ways, and other facilities, grading to minimum feasible cut and fill depths and trenching up to 3 feet in depth would be required. Other types of grading expected to be used on site include “disc and roll” grading in select locations with highly variable terrain (rubber-tired farming tractors towing disc harrow equipment to break up the top 2 to 3 inches of soil, followed by a drum roller to flatten the ground surface), and micrograding (also referred to as “isolated cut and fill”) which would use a scraper to flatten the ground surface in areas where existing grade cannot accommodate perimeter fencing, roads, or other equipment or structures. Final grading design has not been completed for the Modified Project but would be completed during final design.

One of two potential methods would be used to construct the solar array supports at the solar plant site. The first method involves driving, screwing, or grouting steel piles to depths of approximately 8 to 10 feet below ground using tractor-sized machinery. In the second method, the solar array would be supported by concrete foundations placed or poured on the ground surface. Installation of steel piles would permanently disturb the ground surface only at the point of insertion and would require more ground penetration; concrete foundations would reduce the ground penetration but would increase the permanent disturbance to soil at the ground surface.

A total of 99 archaeological sites are located within the Modified Project's APE. Of these, 15 have been determined not eligible for listing in the NRHP and 84 remain unevaluated. In addition, there may also be currently unknown subsurface resources within the APE. These resources could be directly impacted by construction of the Modified Project. As indicated in Section 3.6.4, the Grant Holder has proposed to implement DFs CUL-16 and CUL-17 to reduce the potential for direct impacts to currently unknown resources through the use of monitoring and measures to halt ground disturbance and implement curation and/or other appropriate mitigation in the event of a discovery.

Indirect effects from construction of the Modified Project could occur to built environment resources (Blythe Airport; Interstate Highway 10; the Atchison, Topeka and Santa Fe Railroad; and a segment of the Parker Headgate Rock-Blythe 161KV transmission line) and other cultural resources located within the indirect effects APE (the DTC/C-AMA, cultural resources in the Mule Mountains ACEC, the Bradshaw Trail and other prehistoric trail segments, cultural resources identified for this Project that are no longer within the Project area, Black Rock, and McCoy Spring) that were identified as a result of consultation. BLM has not made determinations of eligibility or findings of effect under NHPA Section 106 for these resources.

The BLM also has considered the potential effect of the Modified Project on resources identified in the ethnographic study for the MSEP. The MSEP ethnographic assessment resulted in the identification of 12 places of traditional cultural and religious importance, of which three (CA-RIV-10222, Cobble/Pebble Terraces [archaeological sites CA-RIV-3419 and CA-RIV-2846], and the Coco-Maricopa Trail), have been formally evaluated and determined eligible for listing in the NRHP. The other nine resources have not been evaluated. All of these places of traditional and cultural importance are located within the APE for indirect effects for the Modified Project; however, none would be directly affected by the Modified Project. The types of indirect effects to these resources described above could occur as a result of construction of the Modified Project.

As with the Approved Project, adverse effects that the Modified Project may have on cultural resources would be resolved through compliance with the terms of the BLM's Programmatic Agreement under Section 106 of the National Historic Preservation Act (NHPA). In accordance with 36 CFR Section 800.14(b), Programmatic Agreements are used for the resolution of adverse effects for complex project situations and when effects on historic properties or resources eligible for or listed in the NRHP cannot be fully determined prior to approval of an undertaking. The BLM has prepared a Programmatic Agreement in consultation with the SHPO, Indian tribes, and other interested parties. The Programmatic Agreement would govern the conclusion of the identification and evaluation of historic properties (those resources eligible for the NRHP), as well as the resolution of any adverse effects that may result from the proposed or alternative actions. See Appendix B (p. B3-1 et seq.). The Programmatic Agreement is being amended to allow for changes in project ownership without requiring further amendments to the Programmatic Agreement. The Grant Holder's proposed design features would also reduce the severity of adverse effects on cultural resources.

No additional impacts to cultural resources are anticipated from operation and maintenance or decommissioning of the Modified Project.

3.6.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would be left with the approximately 4,433-acre ROW grant remaining after its partial voluntary relinquishment, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The current ROW approval represents approximately 65 percent of the Approved Project from the 2010 PA/FEIS and 2010 ROD, the remainder of which the Grant Holder relinquished on March 7, 2013. The direct and indirect effects to cultural resources associated with the development of this alternative would be largely the same as those associated with the Modified Project, with the exception of four additional archaeological sites that are located within the existing ROW but outside of the Modified Project impact area. The four sites have not been evaluated for eligibility for listing in the NRHP. These four sites would be directly impacted by the development of this alternative. As with the Modified Project, adverse effects that Alternative 2 may have on cultural resources will be resolved through compliance with the terms of the Programmatic Agreement developed in compliance with Section 106 of the NHPA.

3.6.5.3 Cumulative Effects

Cumulative impacts on cultural resources take into account the Modified Project's or Alternative 2's impacts in combination with those of other past, present, and reasonably foreseeable future actions. When analyzing cumulative impacts on cultural resources, an assessment is made of the impacts on individual resources as well as the cultural resources within the cumulative impact analysis area.

The geographic area of analysis for cultural resources is broader than the project site and study area, and includes the cultural resources, traditional use areas, and cultural landscapes located along the I-10 corridor between Desert Center and Blythe in eastern Riverside County. This region is appropriate because of its geographical proximity to the project site, the large amount of recent cultural resources work conducted in the region associated with other large proposed projects, and the broadly similar cultural resources found in the region. The Modified Project or Alternative 2 could cause impacts on cultural resources during the construction period or as a result of operation and maintenance or closure and decommissioning activities.

The total number of cultural resources located within the geographic area of analysis is unknown. However, the information regarding the number of resources impacted by past, present, and future projects in the geographic area of analysis has been compiled where data is available.

Information on one past project in the cumulative impact study area, the Blythe Energy II Project, is available. That project affected six historic-period archaeological resources and four historic-period built environment resources (CEC and WAPA, 2005). The number of archeological sites that have been lost as a result of the development of other past projects in the project vicinity is unknown.

Regarding potential impacts of present and reasonably foreseeable future projects, the BLM notes that the project vicinity contains a significant archaeological and historical record that, in many

cases, has not been well documented or recorded. Thus, there is the potential for the Modified Project or Alternative 2 and all ongoing and reasonably foreseeable future development projects in the vicinity (including all projects summarized in Tables 3.1-1 and 3.1-2 and shown on Figure 3.1-1) to inadvertently discover, unearth, expose, or disturb, and thereby damage archaeological, historic, and Native American resources, the locations of which are unknown. Any number of these resources could be eligible for listing in the NRHP.

The cumulative projects summarized in Tables 3.1-1 and 3.1-2 and shown on Figure 3.1-1 primarily include large-scale renewable energy projects that require extensive grading and development, and also include other types of projects. Specific data or other information about the impacts of the Genesis Solar Energy Project, Desert Sunlight Solar, Rice Solar Energy Project, Eagle Mountain Pumped Storage Project, McCoy Solar Energy Project, Quartzsite Solar, and Desert Harvest to known cultural resources is available; however, information is not known about the other projects.

The Final EIS for the Genesis Solar Energy Project identifies 27 archeological sites that would be affected by the project, of which 12 are prehistoric in age and 15 are historic in age (BLM, 2010). The Final EIS for the Desert Sunlight Solar Project discloses that the project would have a direct effect on 58 archaeological sites, including 49 historic-era sites, 6 prehistoric sites, 1 multi-component site (having both prehistoric and historic components), and 1 site of unknown date, and an indirect impact on 1 built environment resource, 2 archaeological districts, and 1 prehistoric archaeological site (BLM, 2011). Rice Solar Energy Project would directly affect 77 archaeological sites, of which 14 are historic-era and 63 are prehistoric (WAPA et al., 2010). The Eagle Mountain Pumped Storage Project would affect one built environment resource and seven historic-era archaeological sites (SWRCB, 2010). The McCoy Solar Energy Project would affect 101 archaeological sites (the dates of which are not specified in the Final EIS for the project) (BLM, 2012b). The Desert Harvest project would directly affect one prehistoric archaeological site and indirectly affect one historic-era landscape (BLM, 2012a).As described and analyzed above, the Modified Project would directly impact a total of 99 known archaeological sites and would indirectly impact four built environment resources and a number of other cultural resources. Alternative 2 would directly impact 103 known archaeological sites.

Not all of the sites affected by these projects are the same. Prehistoric and historic sites are different, and prehistoric sites can vary from one another because they date to different eras. Where one type of resource is most common in an area and another type of resource much less common, destruction of a few of the less common resources may cause a different cumulative impact than destruction of a single site of a common resource. Similarly, not all historic sites are the same: the import of unassociated refuse scatters is very different from that of sites clearly associated with specific events (such as the Desert Training Center). Accordingly, this analysis endeavors to provide a more qualitative cumulative effects analysis based on research themes for the affected area to the extent feasible.

The majority of cultural resources identified as a result of past and present projects along the I-10 corridor are archaeological sites, most of which date from the historic period. Prehistoric sites consist of trails, campsites, habitation sites, lithic scatters, and ceramic scatters. Historic-era sites

include roads, refuse scatters, camps, and features associated with mining, transportation, and military training. Many historic-era sites are related to the DTC-C/AMA. Many of these sites can contribute information that would contribute to the understanding of regional research themes. Examples of prehistoric regional research themes include: chronology, ritual activity, travel and trade, ethnicity, subsistence and settlement, and lithic technology. Examples of historic-era regional research themes include: transportation, mining, agriculture and ranching, and military training. While it is not possible based on available data to quantify how many of the cultural resources impacted by past, present, and reasonably foreseeable projects could provide information relevant to these themes, it is likely that the cumulative loss of cultural resources as a result of these projects could result in a loss of important information necessary to a full understanding of regional history.

Many of the archaeological sites that would be affected by the Modified Project could potentially contribute to these regional research themes. One site, a prehistoric trail, could contribute to the themes of travel and trade, and ritual activity. Another site could contribute to the theme of subsistence and settlement. Of the historic-era sites, 30 are associated with the theme of agriculture and ranching, while 60 are associated with the DTC-C/AMA. It is possible that some of these historic-era sites could contribute to the research under the theme of agriculture and ranching and military training.

Damage to or destruction of cultural resources would result in an adverse cumulative impact. None of the archeological sites or cultural resources, once damaged or destroyed by the Modified Project or Alternative 2 or other projects in the cumulative scenario, can be replaced. In addition, construction of the solar and wind projects proposed throughout this region would result in substantial changes in the setting of the areas in which they are constructed. These kinds of cumulative effects may affect the setting, feeling, and association of built historic resources and other cultural resources within the cumulative effects geographic area of analysis. Potential adverse effects would include direct effects in the form of physical disturbance or alteration as a result of construction activity or indirect effects in the form of diminished character and setting of the resources due to the presence of industrial structures.

Effects of the Modified Project and Alternative 2 would combine with impacts from past, present, and reasonably foreseeable projects, and cumulative effects on cultural resources would be substantial and adverse.

3.6.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to cultural resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-65 et seq.). Adverse effects that the Modified Project or Alternative 2 may have on cultural resources would be resolved through compliance with the terms of the BLM's Programmatic Agreement, as amended, under NHPA Section 106. Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to the approved mitigation measures are not warranted because the activities that could impact cultural resources are substantially similar to or the same as the activities for which the mitigation obligations for the Approved Project were designed. Also, as described in Chapter 2 and

Section 3.6.4, above, the Grant Holder has proposed to incorporate Mitigation Measures CUL-1 through CUL-19 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context.

Even with the implementation of mitigation measures described above, residual impacts related to cultural resources would be expected to occur as described in Sections 3.6.5.1, 3.6.5.2, and 3.6.5.3.

TABLE 3.6-1
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR CULTURAL RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
CUL-1 through CUL-19	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

AECOM, 2013. Draft Ethnographic Assessment for the McCoy Solar Energy Project, Riverside County, California. Prepared for Bureau of Land Management, February.

Bureau of Land Management (BLM), 2010. Plan Amendment/Final EIS for the Genesis Solar Energy Project. August.

BLM, 2011. Desert Sunlight Solar Farm Project, California Desert Conservation Plan Amendment and Final Environmental Impact Statement. April.

BLM, 2012a. Desert Harvest Solar Project, Final Environmental Impact Statement and Proposed California Desert Conservation Area Plan Amendment. December.

BLM, 2012b. McCoy Solar Energy Project, Proposed Plan Amendment and Final Environmental Impact Statement. December.

California Energy Commission (CEC) and Western Area Power Authority (WAPA), 2005. Final Staff Assessment for the Blythe Energy Project Phase II, Application for Certification (02-AFC-1), Riverside County. April.

Tennyson, Matthew, and Rebecca Apple, 2010. Cultural Resources Evaluation Report for Phase 1A of the Proposed Blythe Solar Power Project, Riverside County, California. Prepared by AECOM, September.

State Water Resources Control Board (SWRCB), 2010. Eagle Mountain Pumped Storage Project Draft Environmental Impact Report, Volume I, State Clearinghouse No. 2009011010, FERC Project No. 13123. July.

WAPA, CEC, and BLM, 1010. Draft Environmental Impact Statement/Staff Assessment for the Solar Reserve LLC Rice Solar Energy Project, Riverside County, California (DOE/EIS-0439). October.

Weidlich, Steve, and Hillary Warren. McCoy Mountains Petroglyph Field Effort Summary. Memo to Tiffany Thomas and George Kline, Bureau of Land Management, November 15, 2013.

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3.7 Hazards and Hazardous Materials

This section describes and evaluates issues related to hazards and hazardous materials, waste management, transmission safety line safety, aviation safety, worker safety, geologic hazards, and site security for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS. Those settings and analyses that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2 and analyzes modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B). Any residual effects that may remain following the implementation of such measures are also identified. Traffic and transportation impacts of the Modified Project are described in Section 3.16, Transportation and Travel Management.

The USEPA submitted scoping comments recommending that: (1) the Draft EIS assess potential exposures to the valley fever fungus, *Coccidioides* spp., and susceptibilities of workers and nearby residents to valley fever due to soil-disturbing activities of the project; and (2) that the Grant Holder address the full product life cycle by sourcing PV components from a company that minimizes environmental impacts during raw material extraction; manufactures PV panels in a zero-waste facility; provides future PV disassembly for material recovery for reuse and recycling; and minimizes the carbon footprint associated with the manufacture and transport of PV panels (see Appendix D). This section addresses those comments.

3.7.1 Environmental Setting

3.7.1.1 Hazardous Materials

Section 3.12.1 of the 2010 PA/FEIS (Appendix A, p. 3.12-1 et seq.) describes the various factors associated with the Approved Project area that affect the potential for an accidental release of a hazardous material that could cause public health impacts, including local meteorological conditions, terrain characteristics, and location of population centers and sensitive receptors. No existing health concerns associated with hazardous materials have been identified within a 6-mile radius of the site. Likewise, no evidence or record of any use, spillage, or disposal of hazardous substances has been identified on the approved site or of any other environmental concern that would require remedial action (AECOM, 2013). There are no known occurrences of unexploded ordnance (UXO) within the boundaries of the Modified Project site (Appendix A, p. 3.12-2).[1] However, as noted in Section 3.12.4 of the 2010 PA/FEIS (Appendix A, p. 3.12-2), historical use of the approved site and the surrounding area included General George Patton's Desert Training Camps during World War II. Live-fire training has occurred in the general vicinity of the site, and

[1] One UXO was found in May 2011 during desert tortoise fencing installation for the Approved Project; it was located within a wash crossed by the off-site linear features that are not within the Modified Project boundary (Solar Millennium, 2011).

conventional and unconventional land mines and improvised personnel mines have been detected nearby (off-site) in addition to UXO. For purposes of analyzing hazards and hazardous materials impacts of the Modified Project, the study area is substantially the same as the area evaluated in the 2010 PA/FEIS. Because the relevant environmental setting information has not changed since publication of the 2010 PA/FEIS or the 2010 ROD for the Approved Project, it has not been supplemented.

3.7.1.2 Waste Management

Section 3.12.3 of the 2010 PA/FEIS (Appendix A, p. 3.12-2) describes characteristics of the affected environment for waste management. This analysis of the Modified Project relies on the discussion in Section 3.12.3, with the additional consideration that the Desert Center and Mecca II landfills are only open two days per year, and are not expected to be reasonable locations to deposit waste generated during construction and operation of the Modified Project. The remaining two landfills within 100 miles, the Blythe and Oasis Landfills, each have over 1,000,000 cubic yards of remaining capacity and are expected to remain open until at least 2047.

Additionally, during the site visit conducted in June 2013, small quantities of refuse were observed at various locations on the subject property, consisting primarily of miscellaneous paper and plastic waste (AECOM, 2013).

3.7.1.3 Aviation Safety

Section 3.12.7 of the 2010 PA/FEIS (Appendix A, p. 3.12-3 et seq.) describes the existing setting related to aviation safety, including the presence of the Blythe Municipal Airport 1 mile to the southeast of the approved site. Only six aircraft are now based at the airport, including four single engines and two multi-engine aircraft (AirNav, 2013).

Relevant sections of the Riverside County Airport Land Use Compatibility Plan have not been updated since the analysis for the Approved Project in Section 3.12.7 of the 2010 PA/FEIS, therefore the discussion summarizing future use assumptions and land use zones does not require supplement. Additionally, descriptions the existing setting with respect to glare and bird attraction have not changed since publication of the 2010 PA/FEIS, and are not supplemented here.

3.7.1.4 Worker Safety

Section 3.12.9 of the 2010 PA/FEIS (Appendix A, p. 3.12-9) explains that worker safety is regulated through laws, ordinances, regulations, and standards at the federal, state, and local levels. Because this remains true, this analysis of the Modified Project tiers to and relies on the discussion in the 2010 PA/FEIS with the following supplementary discussion.

The USEPA recommended that the Draft EIS assess potential exposures of people to the fungus *Coccidioides* spp. due to soil-disturbing activities of the project. *Coccidioides* fungus is endemic to semiarid areas in the southwestern United States, Mexico, and South America. According to the Centers for Disease Control (CDC), *Coccidioides* is suspected to be endemic in the project area (CDC, 2012a). However, there is no conclusive proof at this time that the fungus is present

in the project area or in the vicinity of Blythe. In areas where the fungus lives in the soils, disruption of the soil can cause fugitive dust that causes the spores to become airborne where they can be inhaled by humans and cause an infection in the lungs (CDC, 2013). The infection is called coccidioidomycosis and is commonly known as valley fever. Valley fever infection is highest in California from June to November.

Valley fever is not contagious, and secondary infections are rare. In susceptible people and animals, infection occurs when a spore is inhaled. Symptoms generally occur within 3 weeks of exposure. Most valley fever cases are very mild. It is estimated that 60 percent or more of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention. Coccidioidomycosis infection can dissipate on its own, or be treated with antifungal medications. In very severe cases of coccidioidomycosis, the nervous system can be damaged long-term, or the infected person can develop chronic pneumonia; however, these long-term complications are rare (CDC, 2012b). In extreme cases, valley fever can cause death, usually among patients with compromised immune systems. Currently, there is no vaccine available to prevent coccidioidomycosis. Coccidioidomycosis is a reportable disease in California (CDPH, 2011), meaning that any doctor who sees a patient with the disease must report the instance to public health authorities.

Workers who disturb soil where fungal spores are found, whether by digging, operating earth-moving equipment, driving vehicles, or by working in dusty, wind-blown areas, are more likely to breathe in spores and become infected. People at risk for exposure to Coccidioides can take the following measures to limit exposure:

1. Wear an N95 mask in dusty environments, such as construction zones
2. Take prophylactic anti-fungal medication if deemed necessary by a healthcare provider
3. Clean skin injuries well with soap and water, especially if they have been exposed to soil or dust

It is estimated that more than 4 million people live in areas where valley fever fungus is prevalent in the soils. Based on mapping published by the California Department of Public Health (CDPH), there were 55 cases of valley fever reported in Riverside County in 2012 (an incidence of 2.45 cases per 100,000 people), (CDPH, 2012). By comparison, also in 2012, 1,859 cases were reported in Kern County (217.29 cases per 100,000 people), 321 cases were reported in Los Angeles County (3.24 cases per 100,000 people), and 4 cases were reported in Imperial County (4.48 cases per 100,000 people) (CDPH, 2012). La Paz County had 25 reported cases in 2012 (119.6 cases per 100,000 people) (Arizona Department of Health Services, 2013). However, the La Paz County cases are likely to be the East Sonoran species *C. posadasii*, which is different from the species *C. inmitis*, which occurs in Mediterranean climates (areas of low rainfall, high summer temperatures, and moderate winter temperatures) like the climate experienced in the vicinity of the project site. Approximately 5,000 workers have been onsite at both the Genesis Solar Energy and Desert Sunlight projects in Riverside County over the 3 three years during construction and no cases of valley fever have been reported.

3.7.1.5 Geologic Hazards

Section 3.12.11 of the 2010 PA/FEIS (Appendix A, p. 3.12-9 et seq.) describes the regional and local geology in the eastern Mojave Desert geomorphic province in eastern Riverside County in southeastern California as well as the topography, soils, faulting and seismicity, and types of seismic and other geologic hazards present on and near the approved site. Because these conditions have not changed, this analysis of the Modified Project tiers to, relies on, and does not supplement those discussions.

3.7.1.6 Site Security

Section 3.12.12 of the 2010 PA/FEIS (Appendix A, p. 3.12-15 et seq.) describes the energy generation sector as one of 14 areas of Critical Infrastructure listed by the U.S. Department of Homeland Security (DHS) and identifies other energy sector efforts to increase planning and preparedness, including as they relate to infrastructure protection and cyber security. Because the conditions and authorities described in 2010 PA/FEIS Section 3.12.12 have not changed, this analysis of the Modified Project tiers to, relies on, and does not supplement those discussions, with the exception that the U.S. Department of Energy and the DHS have published an updated Energy Sector-Specific Plan, which provides preparedness guidance for the energy sector.

3.7.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards relating to hazardous materials and hazards of many types are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.7.3 Analytical Methodology

The 2010 PA/FEIS describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project in connection with the risk of accidents and spills and assessment of health risks (Section 4.11.2.1, Appendix A, p. 4.11-1 et seq.); non-hazardous waste management (Section 4.11.3.1, Appendix A, p. 4.11-21 et seq.); UXO (Section 4.11.4.1, Appendix A, p. 4.11-26); worker safety (Section 4.11.9.1, Appendix A, p. 4.11-38 et seq.); geologic hazards (Section 4.11.11.1, Appendix A, p. 4.11-46); and site security (Section 4.11.12.1, Appendix A, p. 4.11-51 et seq.). This analysis of the Modified Project and Alternative 2 tiers to and relies on those same methodologies.

3.7.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects related to hazards and hazardous materials:

> **HAZ-1**, which includes a list of hazardous materials for potential use on the site and requires advance approval for materials not on that list.

HAZ-2, which requires the implementation of a Hazardous Materials Business Plan (HMBP), and a Spill Prevention, Control, and Countermeasure (SPCC) Plan.

HAZ-3, which requires the implementation of a Safety Management Plan for the delivery and handling of liquid hazardous materials.

HAZ-5, which includes requirements for a site-specific Construction Site Security Plan.

HAZ-6, which includes requirements for a site-specific security plan for the commissioning and operational phases.

GEO-1, which outlines what specific information the Soils Engineering Report, as required by Section 1803 of the 2010 CBC, should include.

TRANS-8 requires the Grant Holder to prepare an Avigation Easement in accordance with Appendix D of the California Airport Land Use Planning Handbook and have it signed by the BLM prior to the start of operation of any phase of the project.

TRANS-10 requires the Grant Holder to document, investigate, evaluate, and attempt to resolve all project-related glare complaints throughout the construction and operation of the project, and outlines procedures for doing so.

TRANS-12 requires the Grant Holder to use textured glass or anti-reflective coating on all solar panels.

TRANS-13 requires the Grant Holder to construct all exposed PV panel support structures with matte or non-reflective surfaces.

WORKER SAFETY-1, which includes requirements for a Project Construction Safety and Health Program.

WORKER SAFETY-2, which includes requirements for a Project Operations and Maintenance Safety and Health Program.

WORKER SAFETY-3, which requires the Grant Holder to provide a Construction Safety Supervisor to assure compliance and mitigate hazards.

WORKER SAFETY-4, which requires the Grant Holder to provide payments for a Safety Monitor to be responsible for verifying that the Construction Safety Supervisor implements all appropriate Cal/OSHA and Energy Commission safety requirements.

WORKER SAFETY-5, which requires that a portable automatic external defibrillator (AED) be located on site during construction and operation and that the Grant Holder implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times.

WORKER SAFETY-6, which requires a second access gate for emergency personnel to enter the site.

WORKER SAFETY-7, which requires the Grant Holder to provide payment to the RCFD for the support of construction, operations and maintenance.

WORKER SAFETY-8, which requires site worker use of dust masks and dust control methods.

WORKER SAFETY-9, which requires the Grant Holder to submit to the Riverside County Fire Department (RCFD) all plans and schematic diagrams that show the details of all fire detection and suppression systems and to pay the RCFD for the review of those plans and inspection of the site to ensure compliance with those plans.

WORKER SAFETY-10, which requires the Grant Holder to report to the CPM within 24 hours of any incidence of heat illness occurring in any worker on-site and report to the CPM the incidence of any confirmed case of valley fever in any worker on the site within 24 hours of receipt of medical diagnosis.

WASTE-1 requires the Grant Holder to prepare a UXO Identification, Training, and Reporting Plan to properly train all site workers in the recognition, avoidance, and reporting of military waste debris and ordnance. It also includes specific information that is required in the plan and requires the Grant Holder to submit the plan to the CPM for review and approval prior to the start of construction.

WASTE-2 requires the Grant Holder to provide the résumé of an experienced and qualified Professional Engineer or Professional Geologist to the CPM for review and approval, and includes qualifications and responsibilities of the Professional Engineer or Professional Geologist, including authority to oversee any earth-moving activities that have the potential to disturb contaminated soil and impact public health, safety, and the environment.

WASTE-3 includes procedures the Professional Engineer or Professional Geologist shall follow, including notifying regulatory staff, in the event that potentially contaminated soils are identified during site characterization, excavation, grading, or demolition at either the proposed site or linear facilities.

WASTE-4 requires the Grant Holder to submit a Construction Waste Management Plan to the CPM for review and approval prior to the start of construction, and identifies what the plan shall include.

WASTE-5 requires the Grant Holder to obtain a hazardous waste generator identification number from the USEPA prior to generating any hazardous waste during project construction and operation.

WASTE-6 requires the Grant Holder to notify the CPM of any violations or regulatory actions taken or proposed against the project or related facilities, by any governing body. It also specifies what information shall be shared with the CPM.

WASTE-7 specifies that the Grant Holder shall submit the Operation Waste Management Plan to the CPM for review and approval and specifies what information shall be including in the plan.

WASTE-9 requires the Grant Holder to ensure that all accidental spills or unauthorized releases of hazardous substances are properly documented, managed, and disposed of in accordance with all applicable federal, state, and local requirements.

WASTE-10 requires the Grant Holder to ensure that all non-hazardous, non-recyclable, and non-reusable construction and operation waste is not diverted to Desert Center Landfill or Oasis Sanitary Landfill.

3.7.5 Environmental Consequences

3.7.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Hazardous Materials

This analysis includes a review and assessment of the potential for the transportation, handling, and use of hazardous materials to impact the surrounding community and the environment. Similar to the analysis of the Approved Project described in the 2010 PA/FEIS, this analysis was conducted by examining the choice and amount of chemicals to be used, the manner in which the Grant Holder would use the chemicals, the manner by which they would be transported to the facility and transferred to facility storage tanks, and the way in which the Grant Holder plans to store the materials on site.

Hazardous materials that could be present during construction, operation and maintenance, and decommissioning of the Modified Project are listed in Table 3.7-1.

During construction, all hazardous materials would be stored on site in storage tanks, vessels, or other containers specifically designed for the characteristics of the materials being stored. The storage facilities would include secondary containment in case of tank or vessel failure. Construction- and decommissioning-related hazardous materials used for development of the Modified Project would include gasoline, diesel fuel, oil, lubricants, and small quantities of solvents and paints. Spill prevention and spill control would be incorporated into construction fueling procedures and would be formalized into a Spill Prevention and Management Plan available on-site.

During operation, a variety of chemicals and hazardous materials would be stored and used at the solar facility, such as hydraulic fluid, lube oil, mineral insulating oil, sulfur hexafluoride (contained within switchyard equipment), and bleach. Chemicals would be stored in appropriate containers inside the operation and maintenance buildings or in the water treatment area. These storage areas would be designed to accommodate a leak or spill equal to the full-tank capacity of the largest tanks in a bermed area without flowing out into surrounding areas. The transport, storage, handling, and use of all chemicals would be conducted in accordance with applicable laws, ordinances, regulations, and standards (LORS).

Small quantities of janitorial supplies, office supplies, laboratory supplies, paint, degreasers, herbicides, pesticides, air conditions fluids (chlorofluorocarbons or CFCs), gasoline, hydraulic fluid, propane, and welding rods would be stored and used at the facility during operations. These materials would be stored in the maintenance warehouse of office building, on shelves or in flammable material storage cabinets, as appropriate.

Operation of the solar facility would also generate small quantities of hazardous wastes, such as hydraulic fluids, used oils and greases, spent cleaning solutions, and spent batteries. The Grant Holder would notify the California Department of Toxic Substances Control prior to generating any hazardous waste by obtaining a hazardous waste generator identification number.

TABLE 3.7-1
HAZARDOUS MATERIALS PROPOSED FOR USE DURING CONSTRUCTION, OPERATION, OR MAINTENANCE

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ[a]
Acetylene	74-86-2	Welding gas	Health: moderate toxicity Physical: combustible, flammable Hazard class: Toxic	600 cubic feet	N/A
Argon	7440-37-1	Welding gas	Health: low toxicity Physical: non-flammable gas	600 cubic feet	N/A
Cadmium Telluride (CdTe)	1306-25-8	Solar PV panels	Health: low toxicity Physical: non-flammable	65 lbs sealed within PV panels	N/A
Carbon Dioxide	124-38-9		Health: low toxicity Physical: non-flammable gas	15 tons	N/A
Diesel Fuel	68476-34-6	Equipment refueling	Health: low toxicity Physical: combustible liquid	3,600 gallons	N/A
Herbicide Roundup® or equivalent (Isopropylamine salt of glyphosate)	38641-94-0	Weed management	Health: low toxicity Physical: irritant	No on-site storage, brought on site by licensed contractor, used immediately	N/A
Hydraulic Fluid	64741-89-5	Tracker drive units	Health: low to moderate toxicity Physical: Class IIIB combustible liquid	20 gallons per tracker drive unit, maintenance inventory in 55-gallon steel drums	N/A
Lube Oil	64742-65-0	Lubricate rotating equipment (e.g., tracker drive units)	Health: low toxicity Physical: N/A	Maintenance inventory in 55-gallons steel drums	N/A
Mineral Insulating Oil	8042-47-5	Transformers/ switchyard	Health: low toxicity Physical: N/A	250,000 gallons on site (each 1 MV-A transformer contains approximately 500 gallons); maintenance inventory in 55 gallon steel drums	N/A
Oxygen	7782-44-7	Welding gas	Health: low toxicity Physical: oxidizer	600 cubic feet	N/A
Sulfuric Acid (93%) Caustic (NaOH)(50%) Anti-Scalant Biocide [Magnesium nitrate (1-5%) 5-chloro-2-methyl-4-isothiazolin-3-one (1-5%) 2-methyl-4-isothiazolin-3-one (0.1-1%)] Corrosion inhibitor	7664-93-9 1310-73-2 Varies 10377-60-3 26173-55-4 2682-20-4 Varies	Water treatment	Health: moderate toxicity Physical: reactive Health: high toxicity Physical: reactive	1,000 gallons 1,000 gallons 500 gallons 500 gallons 500 gallons	1,000 pounds (65 gallons) 1,000 pounds (79 gallons) N/A N/A N/A N/A N/A

TABLE 3.7-1 (Continued)
HAZARDOUS MATERIALS PROPOSED FOR USE DURING CONSTRUCTION, OPERATION, OR MAINTENANCE

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ[a]
Sodium Hypochlorite 12.5% solution (bleach)	7681-52-9	Disinfectant for potable water	Health: high toxicity Physical: oxidizer	Plastic 1-gallon containers	100 pounds
Soil Stabilizer Active Ingredient: acrylic or vinyl acetate polymer or equivalent	N/A		Health: non-toxic Physical: N/A	No on-site storage, supplied in 55 gallon drums or 400-gallon totes, used immediately	N/A
Sulfur Hexafluoride	2551-62-4	230 kV breaker insulating medium	Health: low toxicity Physical: N/A	7,500 lbs contained within switchyard equipment	N/A

NOTE:
[a] Reportable quantities for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act.

SOURCE: NextEra, 2013a; NextEra, 2013c.

Additional chemicals could be used and stored on site if a site-specific water treatment system is necessary for the Modified Project. Included in this list of chemicals are sulfuric acid, sodium hydroxide, an anti-scalant of unknown but non-hazardous composition, biocide containing magnesium nitrate, and a corrosion inhibitor of unknown composition and concentration (NextEra Blythe, 2013c).

DF HAZ-3 requires the development and implementation of a Safety Management Plan for the delivery and handling of liquid hazardous materials and includes provisions to provide protective equipment, training, and guides to prevent mixing of incompatible hazardous materials. Implementation of this requirement would limit the potential for liquid hazardous materials to injure workers or damage property.

As described in Chapter 2, the Modified Project may include the use of PV panels that contain a thin semiconductor layer containing cadmium telluride (CdTe). A report by the Norwegian Geotechnical Institute (NGI) notes that "If the modules are destroyed during use and are exposed to rain, emissions can occur; however, a very low vapour pressure and water solubility are expected to result in only trace emissions into the environment" (NGI, 2010, p. 13). Additionally, an article that examined the potential for CdTe leaching from commercial rooftop solar PV installations found the worst-case modeled environmental concentrations in soil, air, and groundwater in a California-based scenario, are one to five orders of magnitude below human health screening levels (Sinha et al., 2012). With the use of CdTe PV panels, implementation of Mitigation Measure 3.7-1 (see Section 3.7.5.4, below), which requires the Grant Holder to prepare and implement a Broken PV Module Detection and Handling Plan reflecting best available peer-reviewed scientific information and, where scientific uncertainty exists about hazardous impacts, best precautionary actions, would minimize the potential for CdTe leaching from damaged panels, and would reduce the potential for the release of hazardous materials from damaged panels.

Small quantities of hazardous wastes would be generated during the construction, operation and maintenance, and decommissioning of the Modified Project. To the extent possible, all hazardous wastes would be recycled. The Grant Holder also would develop and implement plans and programs to ensure safe handling, storage, and use of hazardous materials, such as a Hazardous Material Business Plan and a Spill Prevention, Control, and Countermeasure Plan.

Non-Hazardous Waste Management

Site preparation and construction of the Modified Project would last approximately 48 months and generate non-hazardous, universal, and hazardous wastes in solid and liquid forms. Before construction begins, the Grant Holder would develop and implement a Construction Waste Management Plan to ensure that waste is recycled when possible and properly landfilled as necessary, as described in DF WASTE-4. The Grant Holder is required to submit the Construction Waste Management Plan to the BLM at least 30 days prior to the start of construction activities.

Construction activities would generate an estimated 41 cubic yards per week of non-hazardous solid wastes, consisting of scrap wood, concrete, steel, glass, plastic, paper, insulating materials, aluminum, and food waste. For all construction waste, recyclable materials would be separated and removed to recycling facilities; non-recyclable materials would be disposed of at a Class III landfill. DF WASTE-10 requires that construction and operation wastes are not diverted to Desert Center or Oasis Sanitary Landfills. As described in Section 3.7.1.2, the Desert Center Landfill was eliminated as a potential destination for Modified Project waste due to its limited hours of operation. Without Oasis Sanitary Landfill as a potential waste diversion site, the likely destination for most non-hazardous solid waste generated by the Modified Project during construction and operation is the Blythe Sanitary Landfill. Blythe Sanitary Landfill currently has over 4,000,000 cubic yards of remaining capacity and is permitted to accept up to 400 tons of waste per day. Construction would generate less than 1 percent of the allowable non-hazardous solid waste tonnage per week at the Blythe Sanitary Landfill.

Non-hazardous liquid wastes would also be generated during construction, and would include stormwater runoff (when a rain event occurs), sanitary waste, and dust suppression drainage. Stormwater runoff would be managed in accordance with appropriate LORS. Sanitary wastes would be pumped to tanker trucks by licensed contractors for transport to a sanitary water treatment plant. Potentially contaminated equipment wash water would be contained at designated wash areas and transported to a wastewater treatment facility via a licensed hauler. Please see Section 3.18, Water Resources, for more information on the management of Modified Project wastewater.

Anticipated universal waste generated during construction would include spent batteries (e.g., lead acid and alkaline types). Estimated quantities are 20 spent batteries every two years. Spent batteries would be stored on-site for up to 90 days and then recycled by licensed universal waste handlers.

Operation and maintenance would generate sanitary wastewater, non-hazardous wastes, and small quantities of hazardous waste (Table 3.7-2). These wastes would be recycled or landfilled at off-site locations. Oily rags, oil absorbent, oil filters, and sodium hypochlorite could be landfilled in the nearest Class I facility, which is the Clean Harbors Buttonwillow Industrial Waste Codisposal Facility near Bakersfield, California, estimated to remain open until 2040. Sanitary wastewater from toilets and washrooms would drain into a septic tank. It is expected that up to 250 gallons of wastewater would be generated per day during operation.

At least 30 days prior to the start of operation of the Modified Project, the Grant Holder would submit an Operation Waste Management Plan that would contain detailed information about operation waste streams, management methods to be used for each stream, contingency plans should the facility be closed temporarily, and details regarding management and disposal of facility wastes upon closure of the facility. These requirements are described in DF WASTE-7.

TABLE 3.7-2
SUMMARY OF OPERATION WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream and Classification[a]	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				Onsite	Offsite
Used hydraulic fluid, oils and grease – Non-RCRA hazardous	Tracker drives and electrical equipment	50,000 gallons initial fill; 1,000 gallons refill	Intermittent	Accumulated for < 90 days	Recycle
Lubricating oil – Non-RCRA hazardous	Tracker drives and equipment	300 gallon tank/year	Intermittent	Accumulated for < 90 days	Recycle
Oily rags, oil absorbent, and oil filters – Non-RCRA hazardous	Various	One 55-gallon drums per month	Intermittent	Accumulated for < 90 days	Sent offsite for recovery or disposal at Class I landfill
Sodium hypochlorite 12.5 percent solution (bleach) – Non-RCRA Hazardous	Disinfectant for potable water	4 gallon refill supply	Intermittent1	Accumulated for < 90 days 1,000 gallon storage tank	Sent offsite for recovery or disposal at Class I landfill
Spent batteries – Universal waste	Rechargeable and household	<10/month	Continuous	Accumulate for <1 year	Recycle
Spent batteries – Hazardous (exempt if managed as prescribed by Title 22 CCR Chapter 16).	Lead acid	20 every two years	Intermittent	Accumulated for <90 days	Recycle
Spent fluorescent bulbs – Universal waste	Facility lighting	< 50 per year	Intermittent	Accumulate for <1 year	Recycle
Sanitary wastewater – Non-hazardous	Toilets, washrooms	250 gallons/ day	Continuous	Septic leach field	None

NOTE:
[a] Classification under Title 22 Cal. Code Regs. Division 4.5, Chapters 11, 12, and 23.

SOURCE: NextEra, 2013a

Aviation Safety

Construction, operation, and decommissioning of the Modified Project could affect the operation of the Blythe Airport because of its proximity to the airport.

Solar PV panels have the potential for creating glint and glare, both of which are the result of the reflection of light off of a surface. *Glint* is defined as a momentary flash of light; *glare*, as a more continuous source of excessive brightness relative to the ambient lighting. Glare can cause a brief loss of vision and/or temporary after-images. The amount of light reflected off of a surface affects the intensity of glint or glare that a receptor can experience, and varies based on the amount of sunlight hitting the surface and the reflectivity of the surface (FAA, 2012). Manufacturer documentation of the reflection from PV high-transmission, low-reflectance glass with non-reflective coatings (the type of glass to be used in the Modified Project), indicates that PV panel surface glass is less reflective than standard window glass (SunPower, 2009). The Federal Aviation Administration (FAA) has indicated that it is updating the Reflectivity section of its Technical Guidance for Evaluating Selected Solar Technologies on Airports, but has not issued updated guidance yet (FAA, 2012); in the interim, the FAA recommends using the Sandia National Laboratories Solar Glare Hazard Analysis Tool (SGHAT) to assess the potential glare experienced by aircraft pilots or air traffic control facilities from PV arrays (FAA, 2013). Use of

this tool is required as part of planning analysis of on-airport solar energy systems and strongly encouraged for solar energy systems located off-airport property.

The SGHAT was used to assess glare from the Modified Project that could be experienced by pilots during takeoff or landing at the two runways at Blythe Airport. This tool determined that glare from the Modified Project could affect pilots on northerly and easterly flight paths as they approach or depart the airport, depending on the time of day, time of year, and height above ground (Sandia Corporation, 2013a). Pilots arriving or departing from the west and south are not expected to experience glare form the Modified Project.

Along the eastern approach, the amount of time during which temporary afterimage could occur increases with height to a maximum of approximately 30 minutes (between around 6:30 pm and 7:00 pm Pacific Standard Time[PST]) during June and July. This window of maximum potential temporary afterimage lasts from mid-May through July.

Pilots along the northern approach could experience temporary afterimage throughout the year, at a maximum of about 3.5 hours per day, from around 3:00 pm to around 7:00 pm PST. This three-hour window lasts from approximately April through September. Between October and March, the potential afterimage window tapers to a minimum of about one hour, between approximately 3:15 pm and 4:15 pm PST.

The implementation of DFs TRANS-8 and TRANS-11 through TRANS-13 would reduce the Modified Project's effects on aviation safety through the establishment of an Avigation Easement and the use of anti-reflective panel and structure surfaces. The implementation of DF TRANS-10 would provide a method for documenting and resolving any project-related glare complaints, should they arise, lessening the impact of glare due to the Modified Project.

Worker Safety

As described in Section 3.7.1.4, incidence of valley fever in Riverside County is low relative to nearby counties. However, fugitive dust generated during construction could expose workers to *Coccidioides* spores that may be present in desert soils. Implementation of DF WORKER SAFETY-8 would reduce the risk of valley fever infection by requiring the use of dust masks and dust control methods on site and, and DF WORKER SAFETY-10 would require that any confirmed case of valley fever in an on-site worker be reported to the CPM. Additionally, DFs AQ-SC3, AQ-SC4, and AQ-SC7, described in Section 3.2, Air Resources, would require the Grant Holder to implement fugitive dust control measures during the construction, operation, and maintenance phases, which would reduce the risk to workers of contracting valley fever.

Further, the types of occupations required for the Modified Project are identified, for example, in Table 3.13-5. The analysis further assumes that the construction workforce could be drawn from communities within 2 hours in each direction (Section 3.13.5.1). Even at the farthest reasonable commute, these workers already may be working on sites likely to have soils affected by the valley fever fungus. Accordingly, for a majority of project construction workers, there would be

no change in their potential daily exposure to valley fever fungal spores whether they report to work at the project site or elsewhere in Riverside or La Paz counties.

During construction, operation, maintenance, and decommissioning activities associated with the Modified Project, land disturbance activities could unearth unexploded World War II-era and more recent vintage munitions, including conventional and unconventional land mines, personnel mines, and bullets, the detonation of which would pose a safety risk to workers on-site. For example, surface and shallow sub-surface UXO could be disturbed by vehicles, workers walking, and/or excavation using shovels or similar hand tools, and deeper sub-surface UXO could be disturbed by the earth movement and excavation processes that would be required for development of the Modified Project.

With proper training of site workers in the recognition, avoidance, and reporting procedures to be implemented if suspect UXO are discovered, as required by DF WASTE-1, and with implementation of the approved Mitigation Measure BLM-PHS-1 (Appendix B, p. B4-57), which requires the potential presence of UXO to be investigated in geophysical surveys and remnants of munitions or bullets identified during development to be removed and disposed of in accordance with applicable laws, ordinances, and regulations, the potential risks to workers from encountering UXO would be reduced, but not completely eliminated.

Geologic Hazards

Impacts related to increased potential for erosion are addressed in Section 3.14, Soil Resources.

Groundshaking and Secondary Earthquake Hazards

Based on the potential for moderately intense earthquake-related ground shaking on the project site identified in the 2010 PA/FEIS (Appendix A, p. 4.11-46), the anticipated level of shaking is not likely to result in damage to Modified Project structures, which would be built according to design standards that address seismic safety (i.e., the California Building Code and standards recommended in a site-specific geotechnical report).

Due to the site's low to moderate liquefaction potential and dense to very dense soils (Appendix A, p. 4.11-47), the Modified Project is not likely to be affected by liquefaction, but may be affected by earthquake-induced settlement. This potential impact is addressed by the requirements of DF GEO-1, requiring that the Grant Holder incorporate the recommendations of a site-specific soils engineering report that addresses the potential for liquefaction, settlement due to compressible soils or groundwater extraction, and the possible presence of expansive clay soils into project foundation and grading plan design.

Subsidence and Settlement

As described in the 2010 PA/FEIS (Appendix A, p. 4.11-47), the potential for local or regional ground subsidence resulting from petroleum, natural gas, or groundwater extraction is considered to be very low. Therefore, it is not anticipated that impacts due to subsidence and settlement would occur for the Modified Project.

Hydrocompaction

As described in the 2010 PA/FEIS (Appendix A, p. 4.11-47), there is a low to moderate risk of hydrocompaction on the site. Potential impacts related to this risk would be addressed by DF GEO-1, described above.

Corrosive Soils

As described in the 2010 PA/FEIS (Appendix A, p. 4.11-47), fine-grain, moist soils containing sulfides are present at the site and would be corrosive to buried structures. If a buried structure were to corrode as a result of contact with these solids, it could crack or prematurely fail. However, on-site soil conditions are neither unique nor particularly hazardous, and methods to address corrosive and expansive soils are common engineering practices. Consequently, the effects of corrosive soils could be mitigated effectively through final design by incorporating the recommendations of a site-specific geotechnical report as required by DF GEO-1.

Site Security

The level of security needed for any particular facility depends on the threat, the likelihood of an adversarial attack, the likelihood of success in causing a catastrophic event, and the severity of consequences of that event. DHS's Chemical Facility Anti-Terrorism Standards require facilities that use or store certain hazardous materials to conduct vulnerability assessments and implement certain specified security measures. These standards were implemented with the publication of Appendix A to the standards, which includes a list of chemicals of interest. The Modified Project would not use or store any of chemical constituents regulated by DHS but would implement at least a minimum level of security consistent with DHS standards.

As described in the 2010 PA/FEIS, the Approved Project was considered to be "low vulnerability" (Appendix A, p. 4.11-52). The Modified Project similarly is expected to be a "low vulnerability" project based on the methodology described in the 2010 PA/FEIS. DFs HAZ-5 and HAZ-6 outline Construction Security and Operations Security Plans designed to limit unauthorized access to the site by requiring adherence to federal regulations and guidelines. Perimeter fencing, security gates, security personnel, evacuation procedures, site monitoring equipment, and protocols for contacting law enforcement in the case of emergency or suspicious activity are some of the measures designed to protect the site which are included in these plans.

3.7.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Hazardous Materials

The hazardous materials used or produced on site are related to the type of solar technology used. Because Alternative 2 would use the same solar technology as was analyzed in the Approved Project, the direct and indirect hazardous materials effects of Alternative 2 would be similar to but reduced in quantity compared to those analyzed and mitigated for in the 2010 PA/FEIS Section 4.11.2.2.

Aviation Safety

The aviation safety impacts discussed in the 2010 PA/FEIS Sections 4.11.8.2 and 4.11.10.2 would be the same as the impacts of Alternative 2. Those analyses do not require additional information here.

Worker Safety

The potential for presence of Coccidioides spores (valley fever) or UXO would be the same for Alternative 2 as for the Modified Project, as would the potential risks to worker safety. DFs WORKER SAFETY-8, WORKER SAFETY-10, AQ-SC3, AQ-SC4, and AQ-SC7 and approved Mitigation Measure BLM-PHS-1 would also apply to Alternative 2, reducing but not completely eliminating the risks to worker safety from the potential presence of valley fever fungus and/or UXO.

Geologic Hazards

The geologic units that would be disturbed by Alternative 2 are the same as those that would be disturbed in the Modified Project. Alternative 2 has a similar physical and geographic relationship to faults and major geologic features. A comparison of soil erosion impacts resulting from ground disturbance under this Alternative and under the Modified Project is included in Section 3.14.4.2; the level of erosion impact under Alternative 2 may be slightly more than the impact expected for the Modified Project, and less than the Approved Project. Geologic impacts to facilities in Alternative 2 would be otherwise similar to those expected for the Modified Project.

Site Security

Site security impacts would be the same as those described in 2010 PA/FEIS Section 4.11.12.2 because the chemical constituents for Alternative 2 would be the same as the Approved Project and Alternative 2 would implement the same site security mitigation measures as the Approved Project. The analysis in the 2010 PA/FEIS therefore does not require additional information here.

3.7.5.3 Cumulative Effects

Hazardous Materials

Depending on the pathway of exposure, the geographic scope for cumulative effects relating to hazardous materials would be the air basin, watershed boundary, groundwater basin, or extent of affected soils. Materials delivery routes also would be included in the event of a traffic accident-related spill. The temporal scope for hazardous materials impacts includes all phases of the Modified Project or Alternative 2. Ongoing effects of past actions within the geographic scope for hazardous materials are reflected in the environmental setting described in Section 3.3.1.

Many of the projects along the I-10 corridor and in the Palo Verde Watershed identified in Tables 3.1-1 and 3.1-2 could cause similar impacts related to the potential for release of hazardous materials during routine use, transport, storage, and disposal for construction and operation of these projects. Impacts caused by the cumulative projects, combined with the

Modified Project, would not result in an adverse cumulative hazardous materials impact even if all of the projects were constructed simultaneously. The Modified Project or Alternative 2 and all projects in the cumulative scenario would be required to adhere to the robust body of regulations that govern hazardous materials use, transport, storage and handling, water quality BMPs, and worker safety because these laws and other requirements have been adopted with cumulative safety considerations in mind to be sufficiently protective of human health and safety under cumulative conditions. Compliance with these measures would ensure that impacts related to exposure to hazardous materials would be minimized and/or avoided.

Aviation Safety

The Modified Project includes the same transmission line configuration and specifications as described and analyzed in the Approved Project. The cumulative impacts of the transmission line components to aviation safety are analyzed in 2010 PA/FEIS Section 4.11.7.3. Additional analysis is not required here.

The distance over which glare effects could be experienced is directly proportional to the size of the solar array (FAA, 2012). If multiple solar array projects are located adjacent to each other, effectively creating one larger solar array, then the combined effect of the multiple projects could cumulatively affect aviation safety by increasing the distance over which glare may be experienced by aircraft pilots. The geographic scope of this impact therefore includes any projects adjacent to the Modified Project that would effectively increase the area of the solar array. The temporal scope of this impact would include all phases during which solar panels are installed on the project site, approximately 30 years starting after construction is completed. The McCoy Solar Energy Project (MSEP) is the only present or reasonably foreseeable future project from the cumulative scenario that could contribute to a cumulative impact to aviation safety. Located north of and adjacent to the Modified Project site, the MSEP would construct solar PV on 4,496 acres of land. The combined area of the MSEP and the Modified Project solar arrays would be 8,566 acres.

The SGHAT was used to analyze the potential glare effects of the combined array that would result from the construction of the Modified Project and the MSEP. The resulting estimates of potential for temporary afterimage were the same as those determined for the Modified Project. No cumulative impact is therefore anticipated, as the combined effects are the same as the effects of the Modified Project alone.

Geologic Hazards

As noted previously in this section, impacts related to increased potential for erosion are discussed in Section 3.14, Soil Resources. All other geology and soils issues (such as strong seismic ground shaking, subsidence and settlement, hydrocompaction, and corrosive soils) relate to local, site-specific soil conditions, ground response to earthquakes, and the potential for adverse soil conditions to damage the Modified Project’s or Alternative 2’s structural components. The presence of other projects in the cumulative scenario would have no effect on either the severity or the probability of geotechnical challenges associated with seismicity and/or

the character of underlying soils. Such issues are site-specific and unaffected by the presence of other projects in the cumulative scenario, and are not analyzed further in this section.

Site Security

The development and operation of the Modified Project or Alternative 2 would contribute an incremental "low vulnerability" determination with respect to intentionally destructive acts that could combine with the individual threat levels of other past, present, or reasonably foreseeable future energy generation projects. The geographic scope of the cumulative impacts analysis for such threat would be the California Desert area. Potential cumulative effects could occur at any time during the lifespan of the Modified Project or Alternative 2, but would not persist past closure and decommissioning.

Other past, present, and reasonably foreseeable renewable energy generation projects are identified in Section 3.1.3.2 and Tables 3.1-1 and 3.1-2 and include similar utility-scale solar proposals and projects such as the McCoy, Genesis, Palen, and Desert Sunlight solar projects. These facilities also have been determined to have a low threat level. The human and environmental consequences of a realized threat of an intentionally destructive act could be comparable regardless of an energy generation facility's size or power output; however, although possible, it is considered unlikely that the targeting of renewable energy facilities along the I-10 corridor would result in a catastrophic event. Intentionally destructive acts are by their nature unpredictable, and it would be speculative to conclude that the Modified Project or Alternative 2 would cause or contribute to a significant cumulative effect in this regard.

3.7.5.4 Mitigation Measures

Existing, approved mitigation measures to address impacts related to hazardous materials and other hazards are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-57 et seq.). Based on the modifications proposed in the Level 3 variance request, proposed modifications to the approved mitigation measures are warranted. Specifically, Mitigation Measure HAZ-04 (Appendix B, p. B4-67), which was designed to limit the potential for heat transfer fluid (HTF) to be inadvertently released by isolating sections of HTF piping, and Mitigation Measures TRANS-07 and TRANS-09 (Appendix B, p. B4-70), which were designed to minimize transportation safety impacts resulting from thermal plumes and mirrors, are no longer necessary. However, these measures would remain relevant to Alternative 2.

Also, as described in Chapter 2 and Section 3.7.4, above, the Grant Holder has proposed to incorporate Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-5, HAZ-6, GEO-1, TRANS-8, TRANS-10, TRANS-12, TRANS-13, WORKER SAFETY-1 through WORKER SAFETY-10, WASTE-1 through WASTE-7, WASTE-9, and WASTE-10 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context.

New mitigation measures also are recommended. To address the potential hazard created by the use of CdTe panels, the following measure would reduce the risks caused by damaged panels:

Mitigation Measure 3.7-1: Broken PV Module Detection and Handling Plan. If photovoltaic (PV) panels containing CdTe are used on the Project site, the Grant Holder shall prepare and implement a Broken PV Module Detection and Handling Plan. The plan shall describe the Grant Holder's plan for identifying, handling and disposing of PV modules that may break, chip, or crack at some point during the Modified Project's life cycle to ensure the safe handling, storage, transport, and recycling and/or disposal of the modules and related electrical components in a manner that is compliant with applicable law and protective of human health and the environment. The plan shall reflect best available peer-reviewed scientific information and, where scientific uncertainty exists about hazardous impacts, best precautionary actions. The plan shall be submitted to the BLM for review and approval prior to commencement of construction activities and prior to delivery of CdTe-containing PV panels to the project site and shall be distributed to all construction crew members and temporary and permanent employees prior to construction and operation of the Modified Project. All available data from the panel manufacturer(s) regarding materials used and safety procedures and/or concerns shall be appended to the plan to assist the BLM with identifying potential hazards and abatement measures.

Although unlikely, it is possible that even after the implementation of the mitigation measures, as described above or as written in the 2010 ROD for the Approved Project, an accidental release of hazardous materials could occur and could cause an airborne or waterborne risk to the human environment. Because no additional mitigation is recommended to address other hazards discussed in this chapter, including non-hazardous waste, transmission lines, traffic/transportation/aviation, geology, and site security, residual impacts relating to these issues would be as described for the Modified Project, Alternative 2, and cumulative scenario in Sections 3.7.5.1, 3.7.5.2, and 3.7.5.3, respectively.

TABLE 3.7-3
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR HAZARDS AND HAZARDOUS MATERIALS

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
BLM-PHS-1 and BLM-PHS-2	Applicable; no revisions made.	Applicable; no revisions made.
HAZ-04, TRANS-07, TRANS-09	Not applicable; deleted.	Applicable; no revisions made.
HAZ-1, HAZ-2, HAZ-3, HAZ-5, HAZ-6, GEO-1, TRANS-8, TRANS-10, TRANS-12, TRANS-13, WORKER SAFETY-1 through WORKER SAFETY-10, WASTE-1 through WASTE-7, WASTE-9, and WASTE-10	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
Mitigation Measure 3.7-1: Broken PV Module Detection and Handling Plan	Applicable.	Not applicable.

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3.8 Lands and Realty

This section describes and evaluates issues related to lands and realty for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS, and are discussed only to the extent that those applicable to the Modified Project differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project (Alternative 1) and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures.

The BLM received several scoping comments regarding lands and realty that expressed concern about the Modified Project's potential impairment of other land uses, conformity with the CDCA Plan, and support for or conflict with the objectives of federal, state, tribal or local land use plans, policies and controls in the project area (Appendix D). Scoping comments about the relationship of the Modified Project relative to the DRECP are addressed in Section 1.4.3 of this EIS.

3.8.1 Environmental Setting

Section 3.6 of the 2010 PA/FEIS (Appendix A, p. 3.6-1 et seq.) describes the lands and resources administered by BLM in eastern Riverside County, including land uses for utility corridors, rights-of-way, renewable energy activities and a withdrawal application. Within the immediate and surrounding areas of the approved site, there are no communications sites, land use permits, leases, or easements of record, nor are any land tenure issues identified in close proximity to or that would be affected by the BSPP whether developed in accordance with the Approved Project or the Modified Project. See 2010 PA/FEIS Figure 6 (Appendix A, p. AA-9). Uses associated with the Approved Project are the only existing authorized uses within the solar plant site.

For purposes of analyzing lands and realty impacts of the Modified Project and Alternative 2, the study area consists of a subset of the area evaluated in the 2010 PA/FEIS. The 2010 ROD for the Approved Project amended the CDCA Plan specifically to identify the approved site as suitable for solar energy development (Appendix B, pp. 13, 58), and to close designated vehicle access routes within the solar plant site (Appendix B, pp. 14-15, 58).

3.8.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards governing lands and realty are set forth in the 2010 PA/FEIS (see Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project relies on those summaries because the applicable laws, regulations, plans, and standards have not changed since the 2010 ROD was signed for the Approved Project.

In general, the Modified Project would be consistent with federal land use plans, policies, and controls in the project area. For example, the Approved Project is located within the California

Desert Conservation Area (CDCA) and is subject to the CDCA Plan. The CDCA Plan establishes goals for protection and for use of the California Desert. It designates distinct multiple use classes for the lands involved, and it establishes a framework for managing the various resources within these classes. Approximately 4 million acres within the CDCA are designated Class L (limited use) (BLM, 2007). Class L lands are managed to protect sensitive, natural, scenic, ecological, and cultural resource values. Electrical generation facilities, including solar generation, may be allowed on Class L lands after NEPA requirements are met (BLM, 1999). The 2010 ROD for the Approved Project amended the CDCA Plan to identify the Approved Project site as suitable for solar energy development (Appendix B, pp. 13, 58), and to close designated vehicle access routes within the solar plant site (Appendix B, pp. 14-15, 58). Further, there are no applicable state, tribal, or local land use plans applicable to the project area, so the Modified Project's consistency with them is not an issue.

3.8.3 Analytical Methodology

Section 4.6.1 of the 2010 PA/FEIS (Appendix A, p. 4.6-1 et seq.) describes the impact assessment methodology relied upon to analyze lands and realty-related impacts of the Approved Project. With the exception of the 2010 ROD for the Approved Project, no additional changes in lands and realty actions have occurred since the 2010 PA/FEIS ; therefore, the BLM Master Title Plats (MTPs) and Land & Mineral Legacy Rehost 2000 System (LR2000) were not re-reviewed for purposes of this analysis of the Modified Project.

3.8.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none specifically address potential effects to lands and realty.

3.8.5 Environmental Consequences

3.8.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

As discussed in the Environmental Setting above, uses associated with the Approved Project are the only existing authorized uses within the solar plant site and the only uses that would be affected by construction, operation and maintenance, and decommissioning of the Modified Project. The Modified Project would result in construction, operation and maintenance, and decommissioning activities on 4,138 acres of Class L lands within the footprint of this authorized use.

Because the Modified Project proposes solar energy development within the boundary of the Approved Project site, it is consistent with the Approved Project CDCA Plan Amendment, and no additional Plan Amendment would be required. This EIS, when finalized, will meet the requirements of NEPA for the Modified Project. Because solar electrical generation facilities may be allowed on Class L lands after NEPA requirements are met (BLM, 1999), no changes in the MUC designation would be required prior to approving the modification.

Although the Modified Project would be consistent with the MUC Guidelines presented in Table 1 of the CDCA Plan (BLM, 1999), it also would restrict use opportunities on the site throughout the anticipated 30-year lifespan. After the Modified Project has been decommissioned, the Class L lands within the site boundary would again be available for multiple uses consistent with the MUC Guidelines.

3.8.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

Alternative 2 would construct, operate, maintain, and decommission a solar thermal trough power plant within the existing 4,433-acre ROW, within which this use was authorized under the Approved Project. Impacts to lands and realty would be similar to those of the Modified Project. Uses associated with the Approved Project are the only existing authorized uses within the solar plant site. There are no other uses within the immediate and surrounding areas of the approved site that would be affected. Since Alternative 2 consists of the same approved land uses as the Approved Project, Alternative 2 would be consistent with the existing approved uses on the solar plant site. However, Alternative 2 would result in construction, operation and maintenance, and decommissioning activities on only 65 percent of the total land area of the Approved Project.

Alternative 2 also would be consistent with the CDCA Plan Amendment for the Approved Project, and an additional Plan Amendment would not be required. Alternative 2 would be consistent with CDCA Plan MUC Guidelines for Class L lands and would restrict use opportunities on 4,433 acres of Class L lands throughout the anticipated 30-year lifespan. After Alternative 2 has been decommissioned, the Class L lands within the Alternative 2 site boundary would again be available for multiple uses consistent with the MUC Guidelines.

3.8.5.3 Cumulative Effects

Both the Modified Project and Alternative 2 would be consistent with the authorized uses within the solar facility site and would not affect any other authorized uses surrounding the site. In addition, both the Modified Project and Alternative 2 would be consistent with the CDCA Plan MUC Guidelines for Class L lands and with the Plan Amendment for the Approved Project.

The geographic scope of the cumulative effects analysis for lands and realty includes the approximately 4 million acres of CDCA lands that are designated Class L. The temporal scope of the cumulative effects analysis is the construction period, 30-year projected lifespan, and decommissioning and closure period of the Modified Project or Alternative 2, as well as the lifespans of other projects whose features may be located based on constraints imposed by implementation of the Modified Project or Alternative 2.

Existing conditions within the cumulative impacts area reflect a combination of the natural condition, Class L use opportunities presently being exercised, and, where such opportunities are not currently being exercised, the flexibility to elect to pursue one or more among them at some point in the future. The effects of past actions are reflected in the discussion in Section 3.6 of the 2010 PA/FEIS (Appendix A, p. 3.6-1 et seq.). Effects of the Modified Project or Alternative 2 on MUCs relate to the opportunity cost of implementing either alternative. If a solar energy project is

developed on the site, the site cannot be used for the other Class L use opportunities that otherwise would be available. Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1. Among them, projects that also would be developed wholly or partially on lands designated as Class L would similarly restrict available use opportunities within that classification for the duration of those projects. The Modified Project would remove approximately 4,138 acres of Class L lands from availability for other uses, and Alternative 2 would remove 4,433 acres.

Of the projects in Tables 3.1-1 and 3.1-2, the McCoy Solar Energy, McCoy Soleil, enXco, Desert Lily Soleil, Big Maria Vista, and Mule Mountain solar projects would be wholly or partially located on lands designated Class L. Together, these projects would occupy 20,085 acres of Class L lands, for a total of over 24,223 acres including the Modified Project's contribution or 24,518 acres including Alternative 2's contribution. The Modified Project represents approximately 17 percent of the total cumulative effect in the study area and Alternative 2 represents approximately 18 percent. The Modified Project or Alternative 2 in combination with the projects listed above would occupy less than 1 percent of the 4 million acres of Class L lands in the CDCA. Large areas of Class L lands would remain available for other uses, other classes of lands also can support some of the same uses that are allowed on Class L lands (BLM, 1999), and, upon completion of decommissioning, lands within the approved site would be available for other uses.

3.8.5.4 Mitigation Measures

As explained in Section 4.6.4 of the 2010 PA/FEIS (Appendix A, p. 4.6-6), compliance with industry standard operating procedures and BMPs would avoid or mitigate potential safety and land use inconsistency issues related to the type of facilities authorized for the Approved Project on MUC L lands. The same would be true for the Modified Project. No mitigation obligations were imposed to address lands and realty impacts of the Approved Project, and none are recommended for the Modified Project. Therefore, residual impacts of the Modified Project would be the same as those described in Sections 3.8.5.1 and 3.8.5.3. Residual impacts if the proposed modification were denied (Alternative 2) would be the same as those described in Sections 3.8.5.2 and 3.8.5.3.

References

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3.9 Mineral Resources

This section describes and evaluates the potential impacts to mineral resources from the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that those that apply to the Modified Project differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B); and any residual effects that may remain following the implementation of such measures are identified. The BLM received no scoping comments regarding mineral resources (Appendix D).

3.9.1 Environmental Setting

Section 3.8 of the 2010 PA/FEIS (Appendix A, p. 3.8-1 et seq.) describes the geologic environment in the relevant portion of the Mojave Desert (the approved site is located in either the southeastern portion of the Mojave Desert geomorphic province or the northeastern quarter of the Colorado Desert geomorphic province, depending on the published reference) and the mineral resources potential of the approved site. For purposes of analyzing mineral resources impacts of the Modified Project and Alternative 2, the study area is a subset of the area evaluated in the 2010 PA/FEIS, all of which is mapped as Mineral Resource Zone (MRZ)-4 (Appendix A, p. 4.7-1). Because this information has not changed since publication of the 2010 PA/FEIS or the 2010 ROD for the Approved Project, this EIS relies on and does not supplement it.

3.9.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards governing mineral resources are set forth in the 2010 PA/FEIS (see Appendix A, p. B-11 et seq.). This analysis of the Modified Project and Alternative 2 relies on those summaries with the following additions.

Since publication of the 2010 PA/FEIS, the BLM adopted Public Land Order No. 7818, which withdraws 303,900 acres of public lands from location and entry under the United States mining laws, subject to valid existing rights, for a period of 20 years to protect 17 Solar Energy Zones (SEZs) designated in the Solar PEIS ROD for future solar development. As described in Section 1.4.1 of this EIS, neither the existing approval nor the proposed modification is subject to the decisions made through the Solar PEIS ROD; however, the site is located within the Riverside East SEZ. If the approved ROW were to be relinquished, the lands on which the ROW grant exists would be subject to the land use plan decisions made through the Solar PEIS ROD. Under Public Land Order No. 7818, however, the SEZ will remain available for mineral and geothermal leasing, and mineral material sales. The United States mining laws govern locatable minerals, which are minerals that generally make the land more valuable for mining purposes than for agriculture and are not already governed by another law (BLM, 2011). This Public Land Order

means that the BLM will not allow new mineral claims in the SEZ and may not renew current claims in those areas until 2033.

3.9.3 Analytical Methodology

Section 4.7.1 the 2010 PA/FEIS (Appendix A, p. 4.7-1 et seq.) describes the impact assessment methodology relied upon to analyze the mineral resource impacts of the Approved Project. Because mineral resource mapping and reporting for the approved site has not changed since the ROD was issued for the Approved Project and because the existing approved use precludes active mining operations or claims for the duration of the ROW grant, geologic maps and reports for this area were not re-reviewed for purposes of this analysis of the Modified Project or Alternative 2.

3.9.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none specifically address potential effects to mineral resources.

3.9.5 Environmental Consequences

3.9.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

No existing or pending mining claims, mineral leases, or mineral materials permits would be affected by construction, operation and maintenance, and decommissioning, as there are currently no mining claims, mineral leases, or mineral materials disposal permits within the Modified Project site. While the Modified Project would make aggregate mineral materials that underlie the Modified Project site inaccessible to exploration and production for the duration of operation and decommissioning, similar mineral resources (e.g., alluvium composed primarily of sands and gravel) are widely available just outside of the Modified Project site because the surrounding lithology is similar (CGS, 2010). In addition, the Modified Project area is not included within a designated production-consumption region for aggregate resources, and therefore even if these aggregate mineral materials are unavailable for the duration of Modified Project operation and decommissioning, there would be no direct and indirect impacts from the Modified Project to the availability and development of mineral materials resources within or near the Project area.

3.9.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

As described in Chapter 2, *Proposed Modification and Alternatives*, denial of the Modified Project would result in an approval of approximately 65 percent of the Approved Project from the 2010 PA/FEIS and 2010 ROD, but would otherwise be the same as the Approved Project. There would be no difference in the direct or indirect impacts to locatable or leasable minerals. Mineral materials are present on the site; however, there are suitable materials throughout the area.

Therefore, there would be no direct or indirect impacts to the availability and development of mineral materials resources in the area.

3.9.5.3 Cumulative Effects

Because neither Alternative 1 nor Alternative 2 would have any direct or indirect effects on mineral resources, neither would cause or contribute to cumulative effects relating to mineral resources.

3.9.5.4 Mitigation Measures

No mitigation measures are recommended for the Modified Project (Alternative 1) or Alternative 2, and none were adopted in the 2010 ROD for the Approved Project. Therefore, residual impacts of the Modified Project would be the same as those described in Sections 3.9.5.1 and 3.9.5.3; residual impacts that would occur if the proposed modification were denied would be the same as those described in Sections 3.9.5.2 and 3.9.5.3.

References

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3.10 Noise

This section describes and evaluates potential noise impacts of the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B); and any residual effects that may remain following the implementation of such measures are identified. The BLM received no scoping comments regarding noise (Appendix D).

3.10.1 Environmental Setting

Section 3.10 of the 2010 PA/FEIS (Appendix A, p. 3.10-1 et seq.) describes the affected environment related to noise. For purposes of analyzing noise impacts of the Modified Project and Alternative 2, the study area is generally the same as that evaluated in the 2010 PA/FEIS. The ambient noise conditions in the study area have not changed and the technical noise-related terms are still applicable. This analysis relies on those discussions, and includes additional information about noise background, noise attenuation, noise exposure and community noise; updates the sensitive receptor discussion to describe the nearest sensitive receptors relative to the Modified Project and Alternative 2; and restates the ambient noise levels that have been monitored in the area and presented in the 2010 PA/FEIS (Appendix A, p. 3.10-1 et seq.).

3.10.1.1 Noise Background

Noise is defined as unwanted sound. Noise can be described in terms of the following three variables: amplitude (loud or soft), frequency (pitch), and time pattern (variability), and its potential effects can be described in terms of a noise generating source, a propagation path, and a receiver (Federal Transit Administration [FTA], 2006). The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually composed of sound emanating from natural sources (birds, leaves, etc.) and from human activities (yard maintenance, vehicles, talking, etc.). Ambient sound levels vary with time of day, wind speed and direction, and level of human activity. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Decibels (dB) are logarithmic units that compare the wide range of sound intensities to which the human ear is sensitive. A ruler is a *linear* scale; it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc. Therefore, the cumulative noise level from two or more sources will combine logarithmically, rather than linearly. When two noise sources of equal intensity or power are measured together,

their combined level is 3 dB higher than the level of either separately. For example, if two identical noise sources produce a noise level of 50 dB each, the combined noise level would be 53 dB, not 100 dB.

3.10.1.2 Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases by 1.5 dBA from 6.0 dBA to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt or scattered bushes and trees.

3.10.1.3 Noise Exposure and Community Noise

To describe environmental noise and to assess impacts on areas sensitive to community noise, a frequency weighting measure that simulates human perception is customarily used. The frequency weighting scale known as A-weighting best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The dBA scale is cited in most noise criteria. In general, a difference of more than 3 dBA is a perceptible change in environmental noise, while a 5 dBA difference typically causes a change in community reaction. An increase of 10 dBA is perceived by people as a doubling of loudness, and almost certainly causes an adverse community response.

3.10.1.4 Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate, also are sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. The Modified Project and Alternative 2 sites are not within the vicinity of any non-residential sensitive receptors (e.g., schools, hospitals, daycare centers, or long-term care facilities). The closest noise-sensitive receptors in the vicinity of the Modified Project and Alternative 2 are residences, one approximately 2,300 feet west of the southwestern site boundary and the other approximately 4,000 feet south of the southern boundary.

3.10.1.5 Ambient Noise

Section 3.10 of the 2010 PA/FEIS (Appendix A, p. 3.10-1 et seq.) describes the noise environment in the affected portion of the Colorado Desert, where the most significant noise source is vehicle traffic on Interstate 10 (I-10) with secondary noise sources including aircraft operations associated with the Blythe Airport, agricultural operations, the Blythe Skeet and Trap Shooting Club, and individual vehicles operating on surrounding dirt roadways. Long-term noise levels measured near the closest residence to the Modified Project and Alternative 2 site boundaries discussed above are presented in Table 3.10-1. The measurement was taken between 2:00 p.m., June 2, and 1:00 p.m., June 4, 2009.

TABLE 3.10-1
SUMMARY OF MEASURED NOISE LEVELS

Measurement Site	Measured Noise Levels, dBA	
	Average During Daytime Hours L_{eq}	Average During Nighttime Hours L_{90}/L_{eq}
Near the Closest Residence[a]	45	36[b]

NOTES:
[a] This measurement site is referred to as "LT" in PA/FEIS Table 3.10-1 (Appendix A, p. 3.10-1.
[b] The nighttime L_{eq} and the corresponding L_{90} values are equal; this is likely due to the proximity of the project site to I-10 (nighttime noise is likely dominated by the relatively steady noise from I-10).

SOURCE: PA/FEIS Table 3.10-1 (Appendix A, p. 3.10-1)

3.10.2 Applicable Laws, Regulations, Plans, and Standards

As explained in 2010 PA/FEIS Section 3.10 (Appendix A, p. 3.10-2), the BLM does not establish noise thresholds for public lands, but defers to other federal, state, and local regulatory agencies. Laws, regulations, plans, and standards governing noise are set forth in the 2010 PA/FEIS (Appendix A, p. 1-18 and p. AB-13). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.10.3 Analytical Methodology

This analysis evaluates potential noise impacts of the Modified Project and Alternative 2 based on review of sensitive receptors, ambient noise levels, and projected noise levels that would be associated with construction, operation, maintenance, and decommissioning of the Modified Project and Alternative 2 at the closest sensitive receptor. The following methods were used to estimate noise levels and evaluate impacts.

3.10.3.1 Construction and Decommissioning Noise Impacts

Noise levels that would be generated by construction activities associated with the Modified Project were estimated by BLM's consultant (ESA, 2013). On-site construction activity noise associated with the Modified Project was estimated using widely accepted equations for combining and attenuating point source noise levels with the excess ground attenuation rate (i.e.,

reduction of 7.5 dBA per doubling of distance; see Noise Background and Noise Attenuation discussions in Sections 3.10.1.1 and 3.10.1.2). The FTA-recommended reference noise levels for representative pieces of construction equipment, information provided by the Grant Holder, and published construction equipment hourly use factors were used to estimate average hourly L_{eq} levels at 50 feet and at the closest residence location (FTA, 2006; AECOM, 2013; and Ventura County, 2010). In addition, peak hour traffic noise that would be associated with the Modified Project was modeled at 50 feet and at the closest residence location using the Federal Highway Administration's (FHWA) Noise Prediction Model algorithms (ESA, 2013). For the purposes of this analysis, estimated construction and decommissioning noise levels at the nearest sensitive receptor location in the vicinity of the project site are compared to an L_{eq} of 45 dBA, which is the measured daytime ambient noise level near the closest residence.

3.10.3.2 Operation and Maintenance Noise Impacts

Noise levels that would be generated by operation and maintenance activities related to the Modified Project were estimated based on modeled levels associated with an acoustical analysis conducted for a large-scale solar PV project with similar solar PV technology (Tetra Tech EC, Inc., 2011). Nighttime noise generated by the Modified Project or Alternative 2 would be negligible. Therefore, for purposes of this analysis, operation and maintenance noise levels at sensitive receptor locations in the vicinity of the Modified Project and Alternative 2 sites are compared to an L_{eq} of 45 dBA (the ambient daytime L_{eq} at the closest residence) to identify potential adverse noise levels.

3.10.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects related to noise:

NOISE-1, Public Notification Process, outlines requirements and responsibilities of the Grant Holder for effectively notifying the public and for facilitating public reporting of noise complaints.

NOISE-2, Noise Complaint Process, states that throughout the construction and operation, the Grant Owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints, and identifies procedures to do so effectively.

NOISE-3, Employee Noise Control Program – Construction, requires the Grant Holder to submit a noise control program to the CPM for review and approval, which will be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.

NOISE-6, Construction Restrictions, outlines operating hours for construction, heavy equipment operation, and noisy construction work relating to any project feature within 0.25 mile of an existing residence.

3.10.5 Environmental Consequences

3.10.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Construction Noise

Noise from construction of the Modified Project would result from construction equipment at the site and from vehicle traffic to and from the site. Noise level exposures resulting from construction equipment would fluctuate widely depending on the construction activity, equipment type, and distance between noise sources and receptors. Noise from construction equipment would vary depending on the construction phase and the number and class of equipment that would operate at a location at any given time.

As described in Section 3.10.1.4, the closest sensitive receptor to the Modified Project site boundary is a residence that is approximately 2,300 feet west of the southwestern site boundary and access road. The loudest on-site construction activities near this residence would be associated with site grading that would occur at a distance as close as 2,400 feet. For the worst-case construction noise analysis, it was assumed that the two loudest pieces of construction equipment associated with grading activities (i.e., a scraper and a grader) would operate concurrently and immediately adjacent to each other. As shown in Table 3.10-2, grading activities are estimated to generate an hourly L_{eq} level of approximately 44 dBA at the closest residence. The Grant Holder has indicated that Vermeer PD10 hydraulic pile drivers would likely be used to install the posts that support the PV panels and that based on manufacturer supplied information, the pile drivers would have maximum instantaneous sound levels of 84 dBA at 50 feet, which would equate to an hourly average L_{eq} of approximately 80 dBA at 50 feet (NextEra, 2013; ESA, 2013). Because site grading at any one location at the site would not occur at the same time and location as pile driving, and because site grading activities would result in a higher hourly L_{eq}, pile driving activities that would be associated with the Modified Project do not represent peak noise levels that would be experienced at the closest residence.

TABLE 3.10-2
ESTIMATED CONSTRUCTION NOISE LEVELS FOR THE MODIFIED PROJECT

Construction Noise Source	Distance from Residence	Hourly L_{eq} Noise Level (dBA)	
		At 50 Feet	At Residence
Site Grading Activities	2,400 feet	86.1	44.1
Site Access Road Peak-hour Traffic Noise	2,300 feet	61.4	36.5
Combined Noise Level	**2,400 feet**	**80.0**	**44.8**

In addition to on-site construction activities, it is estimated that there would be up to 10 heavy-truck one-way trips associated with material deliveries and up to 500 automobile one-way trips associated with commuting workers that would be generated during the a.m. peak hour. Assuming the vehicles would pass within 2,300 feet of the closest residence at a speed of 25 mph, the peak-hour L_{eq} from construction traffic along the access road was modeled to be approximately 37 dBA at the closest

residence. As indicated in Table 3.10-2, the site grading noise combined with the access road traffic noise would result in a worst-case hourly L_{eq} at the closest residence that would be approximately 45 dBA, which is equal to the existing daytime noise level measured near the residence.

The worst-case daytime hourly construction L_{eq} associated with the Modified Project could be distinguishable from ambient I-10 traffic noise at the nearby residences, but would not be expected to cause an adverse reaction. With regard to any nighttime construction activities, worst-case construction noise levels could exceed ambient conditions, resulting in a short-term adverse effect on nearby residences. To ensure that nighttime construction noise would not substantially exceed ambient noise levels at the nearby residences, Mitigation Measure 3.10-1 is recommended, which would prohibit nighttime construction activities between 10:00 p.m. and 7:00 a.m. within 1 mile of residences (see Section 3.10.5.4).

Operation and Maintenance Noise

The Modified Project would result in four main sources of long-term noise, including operation of the solar power plant equipment, the proposed substations, on-site maintenance activities, and off-site commuting worker and delivery trips. Below are discussions of the noise effects that would be associated long-term operation of the Modified Project.

Solar Plant Stationary Sources

The closest proposed on-site substation with step-up transformers would be located more than 1.3 miles away from the closest residence. At this distance, substation-related noise levels would not be audible at the nearest residence. The proposed PV solar arrays would be organized in 2 MW blocks consisting of PV modules, tracking assemblies, invertors, and transformers. Based on acoustic modeling output in the form of plotted sound isopleths for a large-scale solar PV project with similar technology to that proposed for the Modified Project generated using the DataKustic GmbH's CadnaA (v4.2.139) program, solar array noise levels at the nearby residences would be less than 35 dBA (Tetra Tech EC, Inc., 2011). Noise from the solar array would primarily be generated during the daytime. After sunset, when the plant would no longer receive solar radiation, noise levels would be substantially reduced. In addition, the proposed water pumps may operate for several hours per day. Assuming that the water pumps would result in an average noise level of 76 dBA at 50 feet (FTA, 2006), periodic pump noise at the nearest residence located at a distance of approximately 1.4 miles, would be approximately 22 dBA. The ambient daytime L_{eq} measured for the area near the closest residence is approximately 45 dBA (see Table 3.10-1). Therefore, solar plant stationary source noise levels would not be audible at the nearest residences.

On-Site Maintenance Activities

Operation and maintenance of the Modified Project would require a workforce of up to 20 employees at the site. The employees would inspect components of the solar farm, perform preventive maintenance, and conduct PV panel washing. In addition, some amount of unscheduled maintenance and repair would likely be necessary. These maintenance-related activities would not be expected to be audible at the nearest residences.

Off-Site Commuting Employee and Delivery Truck Traffic

Operation and maintenance–related traffic generally would be associated with the 20 workers traveling to and from the site each day. In addition, it is estimated that approximately 12 or fewer daily truck deliveries to the solar plant site would be required. This would result in a total of 32 additional daily round trips (64 one-way trips) on I-10 and on the project access road, which do not occur under existing conditions. The addition of these trips on I-10 and the project access road would not result in a perceivable increase in average ambient noise levels at nearby residences.

Decommissioning Noise

At the end of the 30-year term of the BLM ROW grant, operation of the Modified Project would cease and associated facilities would be decommissioned and dismantled, and the site would be restored. Decommissioning activities could generate temporary noise levels and effects similar to those that would occur during construction (see above).

3.10.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

Construction and Decommissioning Noise

Under Alternative 2, a project using solar thermal parabolic trough technology could be developed at the site at a scale approximately 65 percent of the Approved Project. High pressure steam blows that would be required associated with incorporating the steam turbines under Alternative 2, if un-silenced, can produce noise levels as high as 129 dBA at a distance of 50 feet. Although the exact location of where the stream blows would occur has not been identified, this could amount to roughly 74 dBA at the nearest residence, assuming the nearest steam turbine would be location approximately 1.5 miles from the nearest residence. Un-silenced steam blows could be disturbing at the nearest noise-sensitive receptors, depending on the frequency, duration, and noise intensity of venting. With a silencer installed on the steam blow piping as would be required under Mitigation Measure NOISE-7 (see Section 3.10.5.4, below), noise levels can be attenuated to 89 dBA at 50 feet, which would equate to approximately 34 dBA at the nearest residence. Other on-site construction and decommissioning noise levels that would be associated with Alternative 2 at the nearest residence would be similar to those described for the Modified Project as presented in Table 3.10-2.

The worst-case daytime hourly construction L_{eq} may be distinguishable from ambient I-10 traffic noise at the nearby residences, but would not be expected to cause an adverse reaction. With regard to any nighttime construction activities, worst-case construction noise levels could exceed ambient conditions, resulting in a short-term adverse effect on nearby residences. To ensure that nighttime construction noise would not substantially exceed ambient noise levels at the nearby residences, Mitigation Measure 3.10-1 is recommended, which would prohibit nighttime construction activities between 10:00 p.m. and 7:00 a.m. within 1 mile of residences (see Section 3.10.5.4).

Operation and Maintenance

During operation, the primary noise source associated with Alternative 2 would be the power block, where the steam turbine generator, air-cooled condenser, electric transformer, and various pumps and fans would be located. The overall noise generated by these various noise sources would be based on the configuration of the sources, the number and power rating of the equipment, and any noise-reducing measures incorporated. Based on the noise modeling of thermal parabolic trough technology conducted for operation of the Approved Project (see 2010 PA/FEIS Figure 44, Appendix A p. AA-50) and the assumption that the nearest power block associated with Alternative 2 would be at least 1.5 miles from the closest residence, it is assumed that operation and maintenance noise under Alternative 2 at the closest residence would be approximately 35 dBA, and would not result in an increase in ambient noise levels.

3.10.5.3 Cumulative Effects

Noise levels tend to diminish quickly with distance from a source; therefore, the geographic scope for cumulative impacts associated with noise would be limited to projects located within approximately 0.5 mile of the project site. The temporal scope for cumulative impacts associated with noise would include the construction, operation, maintenance, and decommissioning phases of the Modified Project or Alternative 2.

Any continuing noise impacts of past projects are reflected in the environmental conditions described in Section 3.10.1. Briefly, the Modified Project and Alternative 2 sites are currently undeveloped. The existing predominant source of noise in the area is traffic on I-10, which is approximately 3 miles south of the project site and has been measured to produce daytime and nighttime L_{eq} levels of 45 dBA and 36 dBA, respectively, near the residence approximately 2,300 feet west of the southwestern site boundary. According to Riverside County General Plan guidelines and Ordinance 847 (see 2010 PA/FEIS Table 1-1, p. 1-24), these levels are not considered to be intrusive and indicate an existing cumulative condition related to ambient traffic noise that is not adverse.

Among the projects identified in Section 3.1.3.2 and shown in Figure 3.1-1, only one pending project could be constructed and/or in operation at the same time and within 0.5 mile of the Modified Project or Alternative 2: the McCoy Solar Energy Project, adjacent to the northern boundary of the site. The McCoy Solar Energy Project's southern boundary is approximately 2.6 miles north of the closest residence to the Modified Project and Alternative 2. Given the distance of the McCoy Solar Energy Project site from this residence, it is unlikely that the combined on-site noise levels of this project constructed at the same time as the Modified Project or Alternative 2 would exceed the on-site construction noise levels estimated for the Modified Project or for Alternative 2. However, both projects would use the same site access road, which is approximately 2,300 feet from the residence. The combined peak-hour construction traffic noise of the McCoy Solar Energy Project and the Modified Project or Alternative 2 is not expected to but could exceed the peak-hour construction traffic noise levels estimated for the Modified Project at the nearest residence, resulting in an adverse effect. If the peak-hour construction traffic noise levels were exceeded, construction-related traffic associated with the Modified Project or Alternative 2 and these other projects could contribute to an adverse cumulative effect at the nearest residence.

Given the distance of the McCoy Solar Energy Project from the nearest residence as well as the type of solar energy technology that it would employ (i.e., PV solar panels), and the fact that estimated on-site noise levels at the nearest residence for operation and maintenance of the Modified Project and Alternative 2 would be substantially less than ambient noise levels measured at the closest residence (see Section 3.10.5.2), simultaneous operation and maintenance of the Modified Project or Alternative 2, combined with on-site noise levels that would be associated with the McCoy Solar Energy Project, would not be expected to exceed ambient noise levels at the residence. The combined peak-hour operation traffic noise of the Modified Project or Alternative 2 when considered together with the McCoy Solar Energy Project also is not expected to, but could, cause a measureable increase in average daytime or nighttime ambient noise levels at the nearest residence. If the combined peak-hour operation traffic caused a measureable increase in average daytime or nighttime ambient noise levels at the nearest residence noise, the Modified Project or Alternative 2 and the McCoy Solar Energy Project could cause or contribute to a substantial long-term cumulative effect.

It is anticipated that decommissioning of the Modified Project or Alternative 2 and restoration of the project site would result in substantially the same cumulative impacts as those associated with construction (see above).

3.10.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts related to noise exposure are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. K-12 et seq.). Based on the modifications proposed in the Level 3 variance request, several of the approved mitigation measures no longer would be warranted or would not be applicable for the Modified Project. Specifically, Mitigation Measure NOISE-4 would ensure that the operation would not cause the noise levels due to plant operation alone, during the daytime hours of 7 a.m. to 10 p.m. to exceed an average of 49 dBA L_{eq} measured at or near the monitoring location described in Table 3.10-7 (Modified Project operation and maintenance noise levels would be less 35 dBA at this location); Mitigation Measure NOISE-5 requires an occupational noise survey (Modified Project operation and maintenance noise levels would not exceed OSHA and CAL-OSHA standards, such that a noise survey would not be necessary); and Mitigation Measure NOISE-7 would pose restrictions on the steam-blow process, which would not be applicable to the Modified Project. However, they would remain relevant to Alternative 2. Also, as described in Chapter 2 and Section 3.10.4, above, the Grant Holder has proposed to incorporate Mitigation Measures NOISE-1 through NOISE-3 and NOISE-6 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in these DFs shall also be submitted/reported to the BLM.

A new mitigation measure is recommended that modifies DF NOISE-6 and would be applicable to all construction activities that would occur within 1 mile of a residence between 10:00 p.m. and 7:00 a.m.:

Mitigation Measure 3.10-1: Heavy equipment operation and noisy construction work relating to any project features within 1 mile of an existing residence shall be restricted to between the hours of 7:00 a.m. and 10:00 p.m., and shall not occur on Sundays or federal holidays.

Implementation of Mitigation Measure 3.10-1 would ensure that nighttime construction-related impacts associated with the Modified Project and Alternative 2 would not be adverse.

Residual impacts of the Approved Project on noise would be substantially reduced, but not eliminated, by the Modified Project, and somewhat reduced by Alternative 2. Nighttime noise impacts would be reduced by implementation of Mitigation Measure 3.10-1 to levels that would not be adverse. Because no mitigation measures are recommended to address daytime noise impacts over and above the actions that already are required as a condition of the existing ROW grant or else that voluntarily would be implemented by the Grant Holder, development of the Modified Project or Alternative 2 would cause the daytime noise impacts described in Section 3.10.5.1 and Section 3.10.5.2, respectively. Residual cumulative effects would be the same as described in Section 3.10.5.3.

TABLE 3.10-3
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR NOISE

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
NOISE-4, NOISE-5, NOISE-7	Not applicable; deleted.	Applicable; no revisions made.
NOISE-1 through NOISE-3; NOISE-6	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
Mitigation Measure 3.10-1	Applicable; modifies DF NOISE-6.	Applicable; modifies existing Condition NOISE-6.

References

AECOM, 2013. Pile Driver Noise Analysis Memorandum, Data Request 1: Hydraulic Ram Noise Responses to Data Requests – Set 1, Blythe Solar Power Project (09-AFC-6C), June 12, 2013.

ESA, 2013. Construction and Operation Noise Estimates for the Modified Blythe Solar Power Project, October, 2013.

Federal Transit Administration (FTA), 2006. Transit Noise and Vibration Impact Assessment, May.

NextEra, 2013. Blythe Solar Power Project (09-AFC-6C), Responses to Data Requests – Set 1, Response 1, Submitted to the California Energy Commission on June 2013.

Solar Millennium 2009a Solar Millennium (tn: 52937). Application for Certification Vol. 1 & 2, dated 8/24/2009, Section 5.8.2.4; Tables 5.8-5, 5.8-6.

Tetra Tech EC, Inc., 2011. McCoy Solar Energy Project Acoustic Analysis, prepared for Bureau of Land Management, California Desert District Office, December.

Ventura County, 2010. Construction Noise Threshold Criteria and Control Plan, Figure A-4 Typical Commercial and Industrial Construction Equipment and Use Factors. Adopted November 2005, amended July 2010.

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3.11 Paleontological Resources

This section describes and evaluates the potential impacts of the Modified Project (Alternative 1) and Alternative 2 on paleontological resources. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that those applicable to the Modified Project differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received no scoping comments regarding paleontological resources (see Appendix D).

3.11.1 Environmental Setting

Section 3.11 of the 2010 PA/FEIS (Appendix A, p. 3.11-1 et seq.) and the paleontological resources assessment provided in 2010 PA/FEIS Appendix E (Appendix A, p. E-1 et seq.) describe the methods and results of the site-specific study of paleontological resources. The types of deposits and sediments underlying the approved site include:

1. the Holocene age (about 11,000 years ago to present) alluvium of modern washes from the McCoy Mountains that trend west-east in the west-center and southern portions of the site surface;

2. intermediate alluvium of Holocene to Pleistocene (1.8 million years to 11,000 years ago) age, which occurs as desert varnished pavement[1] surfaces generally in the western half of the site and as small isolated strip surfaces between younger alluvium deposits in the eastern half of the site; and

3. Pleistocene age alluvial deposits of the Palo Verde Mesa, which are mapped in a small portion in the southeastern corner of the site.

Determinations of the paleontological sensitivity of the various parts of the approved site reported in 2010 PA/FEIS Section 3.11 (Appendix A, pp. 3.11-3, 3.11-4) have not changed, and the conclusions remain the same; there is a high probability that paleontological resources exist in the alluvial deposits of the McCoy Wash area located in the northeastern and southern portions of the approved site, in older alluvium deposits, and in the central portion of the site. Furthermore, project activities involving deeper excavations in the younger alluvium that would encounter the underlying older alluvium soils also would have a high probability to encounter paleontological resources. Fossil occurrences of petrified wood and vertebrates such as mice, tortoise, or horse could be encountered in these alluvial deposits. For purposes of analyzing paleontological resources impacts of the Modified Project and alternatives, the study area is a subset of the study

[1] Desert pavement is a surface of angular, interlocking fragments of pebbles, gravel, or boulders that forms in arid areas.

area evaluated in the 2010 PA/FEIS due to the Modified Project's and Alternative 2's reduced footprint within the approved area analyzed for the Approved Project in the 2010 PA/FEIS. Since the publication of the 2010 PA/FEIS, information has been gathered regarding fossil occurrences in sediments of similar origin, lithology, and age (i.e., Holocene and Pleistocene) located to the south of I-10 that is relevant for the region (URS, 2012). Focused concentrations of fossils have been found in paleosols[2] present in these sediments. This supplemental regional information does not alter the above-described conclusion that there is a high probability that paleontological resources exist on the site.

3.11.2 Applicable Laws, Regulations, Plans, and Standards

General environmental laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.11.3 Analytical Methodology

Section 4.10.1 the 2010 PA/FEIS (Appendix A, p. 4.10-1) describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project on paleontological resources. Because site conditions remain the same, neither the site-specific paleontological resources assessment nor the paleontological literature and records searches were redone.

3.11.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to paleontological resources:

PAL-1 requires the assignment of an approved Paleontological Resource Specialist (PRS) and field monitors and outlines the responsibilities of the Grant Holder and CPM and required qualifications of the PRS and other staff.

PAL-2 specifies what information, including a grading plan, that the Grant Holder is required to provide to PRS and the CPM for approval, pertaining to construction and all related facilities where ground disturbance is anticipated.

PAL-3 requires the preparation and implementation of an approved paleontologic resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontologic resources and outlines specific requirements for the PRMMP, as well as the responsibilities of the CMP and PRS.

PAL-4 requires the Grant Holder and PRS to conduct weekly training and meetings for specified employees performing specified tasks involved with, or who operate ground-disturbing equipment or tools, and outlines what shall be included in the weekly training.

[2] A paleosol is a fossil soil preserved within a sequence of geological deposits.

PAL-5 requires the implementation of a monitoring program consistent with the PRMMP for all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified. It also outlines monitoring and reporting procedures and requirements.

PAL-6 requires that the Grant Holder, through the designated PRS, ensure that all components of the PRMMP are adequately performed, including procedures relating to fossil collection, analysis, and documentation.

PAL-7 requires the Grant Holder to ensure preparation of a Paleontologic Resources Report (PRR) by the designated PRS following completion of the ground-disturbing activities, and outlines what shall be included in the PRR.

3.11.5 Environmental Consequences

3.11.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

For the Modified Project, there is a high probability that paleontological resources would be encountered during grading and excavation of the Holocene and Pleistocene alluvial fan and valley deposits located in the western portion of the solar plant site, along the gen-tie line, and in narrow strips in the eastern portion of the solar plant site. Deeper excavations in the younger alluvium located in the eastern half of the solar plant site may encounter the older alluvium, and thus may also have a high probability to encounter paleontological resources.

Construction of the Modified Project would include multiple types of grading, which vary in the degree of disturbance created. For the placement of solar module foundations, underground electric lines, inverter and transformer pads, roads and access ways, and other facilities, grading and trenching would be required. Other types of grading expected to be used on site include “disc and roll” grading in select locations with highly variable terrain (rubber-tired farming tractors towing disc harrow equipment to break up the top 2 to 3 inches of soil, followed by a drum roller to flatten the ground surface) and micrograding (also referred to as “isolated cut and fill”), which would use a scraper to flatten the ground surface in areas where existing grade cannot accommodate perimeter fencing, roads, or other equipment or structures.

The Grant Holder has not yet determined which of two potential methods of constructing support structures for the solar arrays would be used at the solar plant site. The first method involves driving, screwing, or grouting steel piles into the ground using tractor-sized machinery. In the second method, the solar array would be supported by concrete foundations placed or poured on the ground surface. Installation of steel piles would not permanently disturb the ground surface and would require more ground penetration; concrete foundations would reduce the ground penetration but would increase the permanent disturbance to soil at the ground surface.

All of these construction activities could damage or destroy paleontological resources. The potential for encountering fossils hosted in Quaternary alluvium would increase with the depth of cut or ground penetration. The Modified Project includes the DFs described in Section 3.11.4, which include measures to reduce the potential impacts of construction on paleontological

resources. These measures include requirements to retain qualified paleontologic resource monitors, design and implement a Paleontologic Resources Monitoring and Mitigation Plan (PRMMP), train workers regarding their role in the PRMMP, and prepare a Paleontologic Resources Report following completion of ground-disturbing activities. Detection and adequate documentation of paleontologic resources encountered during all ground-disturbing activities except the installation of steel piles are addressed by these mitigation obligations. Because steel piles are driven into the ground from the surface without prior excavation, installation of steel piles could damage paleontologic resources and that damage would go undetected.

As a result, the operation, maintenance, and decommissioning of the Modified Project would not adversely impact paleontological resources because the ground disturbed during these activities would have been already disturbed, and impacts mitigated as required, during construction of the Modified Project.

3.11.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

As described in Chapter 2, denial of the Proposed Modification would be a scaled-down version of the Approved Project. Denial of the Proposed Modification would have the same types of impacts as the Approved Project; however, these effects would occur on only 4,433 acres. No additional analysis beyond what was conducted in the 2010 PA/FEIS is necessary (see Appendix A, p. 4.10-1). The direct and indirect effects of Alternative 2 during construction, operation and maintenance, and decommissioning would be substantially the same as those identified and mitigated for under the Approved Project, but would be smaller in scope because they would occur within a smaller area. Alternative 2 would cut and fill more soil than the Modified Project; however, the paleontological resources disturbed would be noticed during construction monitoring. Installation of the steel piles required for Alternative 2 has the potential to disturb paleontological resources similar to the Modified Project, except that pile driving is more likely to result in the destruction of paleontological resources without their detection by monitors.

3.11.5.3 Cumulative Effects

All projects in the cumulative scenario that would be located on the same geologic units within eastern Riverside County, including Holocene alluvium and Pleistocene alluvium, are considered to be within the geographic scope of the analysis with respect to cumulative impacts on paleontological resources. This is because the ground disturbance caused by individual projects in the cumulative scenario, if not properly mitigated, could combine to cause a cumulative loss of scientific information through disturbance or destruction of potentially significant fossil resources. Since these geologic units are ubiquitous across the interior drainage basins of the desert region, all projects listed in Tables 3.1-1 and 3.1-2 could cause impacts that may be significant when combined.

Projects in the geographic scope for this analysis could affect paleontological resources regardless of their timing. The effects of past actions within the geographic scope are reflected in Section 3.11.1, Environmental Setting.

Cumulative conditions related to paleontological resources involve the loss of non-recoverable scientifically important fossils and associated data, and the incremental loss to science and society of these resources over time. Energy development projects have resulted in cumulative conditions affecting paleontological resources in eastern Riverside County. However, the implementation of protective measures such as the DFs that would be implemented as part of the Modified Project or Alternative 2 and mitigation measures designed to protect paleontological resources during surface disturbing projects has resulted in the salvage and permanent preservation of scientifically significant resources that otherwise would have been destroyed or remain undiscovered. This has substantially reduced the cumulative effects of such projects on paleontological resources, and has resulted in the beneficial cumulative effect of making these fossils available for scientific research and education by placing them in museum collections.

Excavation activities associated with the Modified Project or Alternative 2 in conjunction with other projects in the area could contribute to the progressive loss of sensitive paleontological resources. However, with incorporation of the DFs described in Section 3.11.4, the Modified Project or Alternative 2 would either avoid nearly all impacts to fossil resources, or result in the recovery of scientific data should previously unrecorded fossils of significance be uncovered. Nevertheless, some fossil disturbance could be associated with project-related installation of steel pile foundations, inadvertent damage caused by excavation equipment, or the failure of paleontological monitors to identify fossils. These incremental impacts of the Modified Project or Alternative 2 could combine with the adverse impacts of other projects in the cumulative scenario; however, they would be very minor and would not outweigh the positive effects associated with the recovery of fossils that are of value to the scientific community.

3.11.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to paleontological resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-63 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to the approved mitigation measures are not warranted because the activities that could impact paleontologic resources are similar to or the same as the activities for which the mitigation obligations for the Approved Project were designed. Also, as described in Chapter 2 and Section 3.11.4, above, the Grant Holder has proposed to incorporate Mitigation Measures PAL-1 through PAL-7 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in PAL-1 through PAL-7 shall also be submitted/reported to the BLM. No additional mitigation measures are recommended.

Because no new or modified mitigation measures are recommended, residual impacts related to paleontologic resources would be the same as those described in Sections 3.11.5.1 and 3.11.5.3 for the Modified Project, and Sections 3.11.5.2 and 3.11.5.3 for Alternative 2.

TABLE 3.11-1
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR PALEONTOLOGICAL RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
PAL-1 through PAL-7	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

URS, 2012. Addendum to the Paleontological Technical Report for the Rio Mesa Solar Electric Generating Facility, Riverside County, California. Prepared for BrightSource Energy, Inc. February. [http://docketpublic.energy.ca.gov/PublicDocuments/Regulatory/11-AFC-4%20Rio%20Mesa%20Solar/2012/FEB/TN%2063874%2002-28-12%20Addendum%20to%20the%20Paleontological%20Technical%20Report.pdf]

3.12 Recreation

This section describes and evaluates issues related to recreation resources for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS, and are discussed only to the extent that those applicable to the Modified Project differ from those described in the 2010 PA/FEIS, which is provided in Appendix A. This section analyzes the direct, indirect, and cumulative effects of the Modified Project (Alternative 1) and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received no scoping comments regarding recreation (Appendix D).

3.12.1 Environmental Setting

Section 3.13 of the 2010 PA/FEIS (Appendix A, p. 3.13-1) and the 2010 ROD (Appendix B, pp. 14-15, 58) describe the lack of recreation facilities and specific recreational attractions on the site as well as the decision made in the 2010 ROD to close routes within the solar plant site boundary. Section 3.13 of the 2010 PA/FEIS describes myriad outdoor recreational opportunities in the vicinity of the approved site, including wilderness areas, Long Term Visitor Areas (LTVAs), Areas of Critical Environmental Concern (ACECs), and the Bradshaw Trail. Although the Modified Project would occur no closer and in some cases would occur farther from the recreational opportunities described in 2010 PA/FEIS Section 3.13, the study area for considering potential effects of the Modified Project and alternatives to recreation resources would be substantially the same as that evaluated in the 2010 PA/FEIS. Because the information about recreation resources has not changed since publication of the 2010 PA/FEIS or the 2010 ROD, it has not been supplemented for purposes of this analysis.

3.12.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards governing recreation resources are set forth in the 2010 PA/FEIS (see, e.g., Appendix A, pp. 1-9, 1-19 and pp. AB-6, AB-8, AB-16 et seq.). This analysis of the Modified Project and alternatives relies on those summaries.

3.12.3 Analytical Methodology

Section 4.12.1 the 2010 PA/FEIS (Appendix A, p. 4.12-1) describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project on recreation. This analysis of the impacts of the Modified Project and alternatives relies on the same methodology.

3.12.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none address potential impacts to recreation resources.

3.12.5 Environmental Consequences

3.12.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

The Modified Project would be constructed on 4,070 acres within the existing ROW, making this area unavailable for dispersed recreational activities. In addition, although the Approved Project resulted in the closure of access through the approved solar plant site, access would be maintained through the site if the Modified Project were approved. Construction activities involving the use of heavy equipment would generate noise that could create a nuisance to recreational users in the area (see Section 3.10, Noise). Grading and traffic during the construction phase would generate dust that could degrade the visual quality of the area for recreational users (see Section 3.2, Air Resources). Truck and other vehicle ingress and egress to the construction site also could disturb recreational activities or create a nuisance to recreational users (see Section 3.16, Transportation and Travel Management). The construction and operation of the PV facility would adversely affect the visual quality of the area by converting open space to industrial development. This could impact visitors seeking recreational experiences in a natural setting. Although the site would not be available for recreational use during operation and maintenance (except for the access route through it that would be maintained), such use could resume upon closure and decommissioning of the Modified Project.

3.12.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

The direct impacts of Alternative 2 on recreational resources would be similar to those of the Modified Project, but would occur on a 4,433-acre site. The OHV routes that were closed as a result of the Approved Project within the existing ROW would remain closed under Alternative 2. Additionally, Alternative 2 would have increased indirect impacts on recreation due to noise, dust, and construction traffic compared to those assessed for the Modified Project (see Sections 3.2, 3.10, and 3.16). Alternative 2 would adversely affect the visual quality of the area by converting open space to industrial development, which could impact visitors seeking experiences in a natural setting. However, unlike the Modified Project, Alternative 2 would construct a cooling tower and would have a higher visual profile than the Modified Project, and therefore would be more visually intrusive. Like the Modified Project, the site would not be available for recreational use during operation and maintenance. However, such use could resume upon closure and decommissioning.

3.12.5.3 Cumulative Effects

The geographic scope of the cumulative effects analysis for general recreation at local and regional facilities includes the local and regional recreational facilities described in the 2010 PA/FEIS (Appendix A, p. 3.13-1). The temporal scope includes all phases of the Modified Project, beginning with construction and ending after decommissioning. The effects of past actions are reflected in the discussion in Section 3.12.1 and Section 3.13 of the 2010 PA/FEIS (Appendix A, p. 3.13-1). Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1. The Modified Project would convert 4,070 acres of open space to solar energy development. The approximately 7 miles of OHV routes that were closed within the existing ROW would remain closed. Construction activities associated with the Modified Project could cause indirect impacts related to noise, fugitive dust, and vehicle ingress and egress to the construction site; visual intrusions also could impact visitors seeking experiences for natural setting. The project site would not be available for recreational use during operation. However, such use could resume upon closure and decommissioning. The other projects in the cumulative scenario, and in particular the other renewable energy projects listed in Tables 3.1-1 and 3.1-2, would have similar impacts related to visual resources, noise, fugitive dust and vehicle ingress and egress. Individually and collectively, these projects would add large- and small-scale industrial, utility-related and other uses in the region, resulting in direct preclusion of access to recreational lands that would be dedicated to other, non-recreational uses. Within the California Desert District, approximately 190,000 acres potentially available for recreational use could be lost to solar and wind energy development (BLM, 2013a, 2013b). However, most of the projects in the cumulative scenario are in areas with low recreation use or potential future opportunities. Although the Modified Project's or Alternative 2's effects on recreation individually would be minor in light of the remaining area available for recreational use, this incremental impact, in combination with past, present, and reasonably foreseeable future projects in eastern Riverside County could contribute to a substantial cumulative impact on recreation opportunities and experiences of users, communities, and regional populations.

The cumulative impacts associated with Alternative 2 would be would be slightly increased when compared to the Modified Project. Alternative 2 is larger than the Modified Project and would contribute to approximately 360 acres of additional industrial development to the cumulative scenario. In addition, Alternative 2 would cause increased indirect impacts on recreation due to noise, dust, construction traffic, and increased visual impacts compared to those assessed for the Modified Project.

3.12.5.4 Mitigation Measures

Existing, approved mitigation obligations to address impacts to recreation are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. K-2 et seq.). No additional or revised mitigation measures are recommended for the Modified Project or Alternative 2. Because no new or modified mitigation measures are recommended, residual impacts related to recreational resources would be the same as those described in Sections 3.12.5.1, 3.12.5.2, and 3.12.5.3.

TABLE 3.12-1
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR RECREATION

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
BLM-REC-1 through BLM-REC-5	Applicable; no revisions made.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

Bureau of Land Management (BLM), 1999. California Desert Conservation Area Plan, 1980, as amended through 1999.

BLM, 2010. Blythe Solar Power Project PA/FEIS, August.

BLM, 2013a. BLM California Solar Applications, Updated September 2013.

BLM, 2013b. BLM California Wind Applications, Updated September 2013.

3.13 Socio-Economics and Environmental Justice

This section describes and evaluates the potential impacts of the Modified Project (Alternative 1) and Alternative 2 on socioeconomics and environmental justice. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures are identified. The BLM received no scoping comments regarding socioeconomics, but received several scoping comments regarding environmental justice that expressed concern about the Modified Project's potential to have disproportionate adverse effects on minority and low-income populations. The commenters also requested that the BLM foster public participation by these populations and describe such efforts in the Draft EIS (Appendix D).

3.13.1 Environmental Setting

3.13.1.1 Social and Economic Setting

Section 3.14 of the 2010 PA/FEIS (Appendix A, p. 3.14-1 et seq.) describes the social and demographic background and existing conditions in the area where the Approved Project would be developed, which includes the City of Blythe and the broader Palo Verde Valley. For purposes of analyzing socioeconomic impacts of the Modified Project and alternatives, the study area is the same area that was evaluated in the 2010 PA/FEIS. This analysis of the Modified Project and alternatives relies on that discussion and updates it to reflect changes that have occurred since publication of the 2010 PA/FEIS; namely, that new employment and fiscal data are available that may provide a more accurate reflection of the current socioeconomic conditions in the study area than those relied on in the 2010 PA/FEIS. These data are presented below.

Population

Population estimates and recent growth trends for both the regional and local study areas are summarized in Table 3.13-1. Historical data (1990, 2000, and 2010 census data) are shown for the two counties and the three major communities. Projections for future growth are prepared for counties by the respective states (California Department of Finance and Arizona Department of Administration), but not for cities.

As shown in Table 3.13-1, the population of Riverside County grew rapidly between 1990 and 2000 and also between 2000 and 2010, with the majority of the growth taking place in western Riverside County. The City of Blythe grew rapidly from 1990 to 2000, due in part to the annexation of the two state prisons (Ironwood and Chuckawalla Valley State Prisons). However, the city's household population (non-institutionalized population) also grew rapidly in the 1990s. This growth slowed markedly between 2000 and 2010.

The population of La Paz County, Arizona, grew rapidly between 1990 and 2000 and then slowed in 2000s. The community of Ehrenberg, located across the Colorado River from Blythe, grew moderately during the 1990s and 2000s. The town of Quartzsite, however, grew nearly 80 percent from 1990 to 2000, then its growth slowed in the 2000s.

The forecasted population trends for Riverside and La Paz counties are also shown in Table 3.13-1. Population growth in Riverside County is expected to remain high over the next few decades, though slower than in the 2000s. The growth rate is projected to be about 33 percent between 2010 and 2020, and then fall to 21 percent between 2020 and 2030. La Paz County is forecast to grow more slowly than Riverside; by 5.5 percent from 2010 to 2020 and by 4.6 percent from 2020 to 2030.

TABLE 3.13-1
HISTORICAL AND PROJECTED POPULATION OF THE STUDY AREA

	Census			State Projections		
	1990	**2000**	**2010**	**2020**	**2030**	**2040**
Riverside County, CA	1,170,413	1,545,387	2,189,641	2,904,848	3,507,498	4,103,182
10-year Growth	---[b]	*32.0%*	*41.7%*	*32.7%*	*20.7%*	*17.0%*
Blythe City, CA[a]	8,428	20,465	21,516	---	---	---
Household Pop.	8,269	11,954	12,972	---	---	---
10-year Growth	---	*44.6%*	*8.5%*	---	---	---
La Paz County, AZ	13,844	19,715	20,489	21,627	22,622	23,530
10-year Growth	---	*42.4%*	*3.9%*	*5.5%*	*4.6%*	*4.0%*
Ehrenberg CDP[c], AZ	1,226	1,357	1,470	1,556	1,628	1,693
10-year Growth	---	*13.5%*	*8.3%*	*5.6%*	*4.6%*	*4.0%*
Quartzsite, AZ	1,876	3,354	3,677	4,383	5,166	5,904
10-year Growth	---	*79.7%*	*7.2%*	*19.2%*	*17.9%*	*14.3%*

NOTES:
[a] Total population of Blythe City includes two state prisons, Ironwood State Prison and Chuckawalla Valley State Prison.
[b] Household population excludes population in group quarters, such as prisons
[c] Census-designated place

SOURCE: U.S. Census Bureau, 1990, 2000, 2010; California Department of Finance (DOF), 2007, 2011a, 2011b' Arizona Department of Administration, 2012.

Housing

Current (2010) housing conditions for the regional and local study areas are summarized in Table 3.13-2. The three major communities located within a 1-hour commute of the site are shown, as well as data for both Riverside and La Paz counties.

In 2010, Riverside County had 800,707 housing units, with a vacancy rate of 14.3 percent. CT 469, the rural area of Chuckwalla CCD, had 1,161 units, with a vacancy rate of 37.0 percent. Blythe CCD, which includes the City of Blythe and other areas of Palo Verde Valley, had 6,140 units (of

TABLE 3.13-2
HOUSING PROFILE OF THE REGIONAL STUDY AREA (2010)

(Housing units, except as noted)	Riverside County, CA	Census Tract (CT) 469 (Part of Chuckwalla Valley CCD)[a]	Blythe CCD, CA[b]	Blythe City, CA[c]	La Paz County, AZ[d]	Ehrenberg Census-Designated Place (CDP), AZ	Quartzsite Town, AZ
Total Housing	800,707	1,161	6,140	5,473	16,049	948	3,378
Occupied Housing	686,260	732	5,123	4,513	9,198	645	2,027
Percent Owner Occupied	67.4%	66.3%	52.0%	52.2%	76.9%	62.8%	84.4%
Percent Renter Occupied	32.6%	33.7%	48.0%	47.8%	23.1%	37.2%	15.6%
Vacant Housing	114,447	429	1,017	960	6,851	303	1,351
Percent Vacant	14.3%	37.0%	16.6%	17.5%	42.7%	32.0%	40.0%
Vacant for Seasonal, Recreational, or Occasional Use	50,538	249	342	448	5,318	215	1,087
Vacant for Sale	18,417	68	108	100	370	22	106
Vacant for Rent	23,547	57	329	248	586	47	78

NOTES:
[a] Rural areas of Chuckwalla Valley CCD; excludes state prisons and Colorado River Indian Reservation.
[b] Formerly Palo Verde CCD; excludes state prisons.
[c] Incorporated Blythe city; housing data exclude group quarters.
[d] Includes the part of Colorado River Indian Reservation that is located in Arizona.

SOURCE: U.S. Census Bureau, 2011a.

which 5,473 units were in the city), with a vacancy rate of 16.6 percent (17.5 percent in the city). The higher vacancy rates in eastern Riverside County result from many units maintained for seasonal or recreational use and from slower population growth, as discussed in the previous section.

La Paz County (including the portion of Colorado River Indian Reservation in Arizona) had 16,049 housing units and vacancy rate of 42.7 percent. The two communities near Blythe, Ehrenberg and Quartzsite, have 948 and 3,378 units, respectively, and vacancy rates of 32.0 percent and 40.0 percent.

Hotel and motel accommodations, campgrounds, and RV parks are expected to be as described in Section 3.14 of the 2010 PA/FEIS (Appendix A, pp. 3.14-7 and 3.14-8).

Employment by Industry Group

Employment statistics by industry sector and county for 2011/2012 (as available) are summarized in Table 3.13-3. Government is Riverside County's largest employment sector, accounting for over 20 percent of the total jobs in the County. Additional important industries in the area construction, manufacturing, retail trade, and services (e.g., professional, business, educational, health, and hospitality). In La Paz County, key employment sectors include mining and logging, government, and retail trade.

TABLE 3.13-3
EMPLOYMENT BY INDUSTRY GROUP

NAICS Code	Industry Group	Riverside County (2012)		La Paz County (2011)	
		Persons	Percent of Total	Persons	Percent of Total
11-000000	Total Farm	12,900	2.31	241	3.23
10-000000	Mining and Logging	400	0.07	771	10.33
20-000000	Construction	35,200	6.30	190	2.55
30-000000	Manufacturing	39,500	7.07	203	2.72
41-000000	Wholesale Trade	20,600	3.69	91	1.22
42-000000	Retail Trade	81,100	14.51	1,198	16.05
43-000000	Transportation, Warehousing & Utilities	21,100	3.78	-- [a]	--
50-000000	Information	3,600	1.13	54	0.72
55-000000	Financial Activities	19,300	3.45	443	5.94
60-000000	Professional & Business Services	53,900	9.64	489	6.55
65-000000	Educational & Health Services	65,100	11.65	372	4.98
70-000000	Leisure & Hospitality	72,200	12.92	-- [a]	--
80-000000	Other Services	19,200	3.44	--[a]	--
90-000000	Government	112,100	20.06	2,298	30.79
	Total	**558,900**	**100**	**7,463**	**100**

NOTE: Table reflects the most recent year of data available.

[a] The Bureau of Economic Analysis (BEA) does not provide these numbers to avoid disclosure of confidential information, but the estimates for these items are included in the total.

SOURCE: California EDD, 2013a; BEA, 2012.

Labor Force and Unemployment

Table 3.13-4 presents the labor force, unemployed workers, and unemployment rates of the study area counties from 2007 to 2012 (the last year of data currently available). In 2012, Riverside County had a labor force of 944,500 workers, with an unemployment rate of 12.2 percent, which was higher than the statewide unemployment rate of 10.5 percent in 2012 (EDD, 2013a), but lower than the County unemployment rates from 2009 to 2011, showing an increase in employment since the recession.

In Arizona, La Paz County had an estimated average labor force of 7,687 workers in 2012, with unemployment at 9.2 percent, giving an unemployed labor force of just 705 workers.

Labor Force Growth Projections

Table 3.13-5 presents labor force estimates and projections in the San Bernardino-Riverside-Ontario MSA for those skilled workers (by craft) required for construction and operation of the Modified Project or an alternative as estimated by the Grant Holder. The California EDD does not provide County-specific projections. Employment figures for 2010 are provided, as well as employment projections for the selected occupations for 2020. As of 2010, there were moderately

TABLE 3.13-4
LABOR FORCE AND UNEMPLOYMENT IN THE STUDY AREA

	2007	2008	2009	2010	2011	2012
Riverside County, CA						
Labor force	903,400	912,900	917,000	938,400	939,600	944,500
Employed	849,900	835,200	794,300	802,300	810,400	828,800
Unemployed	54,500	77,800	122,700	136,200	129,200	115,600
Unemployment rate	6.0%	8.5%	13.4%	14.5%	13.7%	12.2%
La Paz County, AZ						
Labor force	7,590	7,529	7,700	7,668	7,519	7,687
Employed	7,215	6,965	6,947	6,858	6,763	6,982
Unemployed	375	564	753	810	756	705
Unemployment rate	4.9%	7.5%	9.8%	10.6%	10.1%	9.2%

SOURCE: California EDD, 2013b; Arizona Department of Administration, 2013

high numbers of skilled workers in Riverside and San Bernardino Counties, including metal workers (13,530), carpenters (10,140), and construction laborers (11,870).

Relevant specialized positions generally were fewer in number, including paving, surfacing, and tamping equipment operators, power plant operators, and construction trade helpers. Employment figures for all occupations presented are anticipated to increase by 2020. The two occupations with the largest anticipated future job growth by 2020 are construction laborers (1,510 new jobs) and metal workers and plastic workers (1,610 new jobs). The highest rate of job growth by occupation in Riverside and San Bernardino Counties is paving, surface, and tamping equipment operators (22.5 percent) (EDD, 2012).

No County-level employment projections for La Paz County are available. Given the small size of the available Arizona labor force within the regional study area, it is expected that any future growth to the La Paz labor force would have a very minor change in future employment for construction occupations.

Fiscal Resources

A summary of Riverside County's expenses and revenues for the 2010-2011 fiscal year (the most recent data available) is provided in Table 3.13-6. As the Modified Project would be constructed in Riverside County, the County would be the local agency with taxing power and could be expected to receive the majority of the direct impacts from the project in the form of additional expenses or revenues (from business and sales taxes, permits, and other sources).

For the fiscal year 2010-2011, revenues for Riverside County totaled approximately $2.6 billion, and expenditures totaled $2.7 billion. Riverside's key expenditures were on public protection, public assistance, and health. Its primary revenue sources were other government agencies, property taxes, and charges for County-provided services.

TABLE 3.13-5
LOCAL LABOR POOL BY CRAFT – RIVERSIDE AND SAN BERNARDINO COUNTIES

	Annual Average Employment		Employment Change		Average Annual Job Openings		
Occupational Title	**2010**	**2020**	**Number**	**Percent**	**New Jobs**	**Net Replacements**	**Total**
Construction Managers	5,000	5,490	490	9.8	49	32	81
Carpenters	10,140	10,450	310	3.1	30	215	245
Cement Masons and Concrete Finishers	2,420	2,570	150	6.2	15	38	53
Construction Laborers	11,870	13,380	1,510	12.7	151	95	246
Paving, Surfacing, and Tamping Equipment Operators	400	490	90	22.5	8	8	16
Operating Engineers and Other Construction Equipment Operators	2,510	3,030	520	20.7	52	58	110
Electricians	4,000	4,520	520	13.0	52	108	160
Plumbers, Pipefitters, and Steamfitters	3,160	3,570	410	13.0	41	91	132
Metal Workers and Plastic Workers	13,530	15,140	1,610	11.9	166	255	421
Helpers – Construction Trades	2,000	2,280	280	14.0	34	53	87
Welders, Cutters, Solderers, and Brazers	2,650	3,090	440	16.6	44	71	115
Architects, Surveyors, and Cartographers	1,070	1,280	210	19.6	20	23	43
Engineering Managers	1,180	1,340	160	13.6	16	23	39
Supervisors of Construction and Extraction Workers	4,540	5,240	700	15.4	70	105	175
Machinists	2,440	2,830	390	16.0	40	45	85
Total	**66,910**	**74,700**	**7,790**	**11.6**	**788**	**1,220**	**2,008**

SOURCE: California EDD, 2012

TABLE 3.13-6
RIVERSIDE COUNTY EXPENSES AND REVENUES FOR FY 2010-2011

	Amount (Dollars)	Percent of Total
Expenses (Total)	2,662,570,257	100
General Government	182,365,482	6.8
Public Protection	1,040,282,249	39.1
Public Ways and Facilities	166,639,057	6.3
Health	350,804,051	13.2
Public Assistance	811,224,131	30.5
Education	19,605,628	0.7
Recreation & Cultural Services	411,911	0.0
Debt Service	86,292,475	3.2
Transfers Out	4,945,273	0.2
Revenue Sources (Total)	2,593,155,749	100
Property Taxes	419,297,189	16.2
Other Taxes	46,694,507	1.8
Licenses, Permits, Franchises	28,491,140	1.1
Fines, Forfeitures and Penalties	96,079,643	3.7
From Use of Money and Property	20,989,701	0.8
From Other Governmental Agencies	1,508,962,163	58.2
Charges for Current Services	426,952,421	16.5
Miscellaneous Revenue	24,775,902	1.0
Other Financing Sources	7,311,330	0.3
Transfers In	13,601,753	0.5

SOURCE: California State Controller's Office, 2012.

3.13.1.2 Environmental Justice Setting

Section 3.5 of the 2010 PA/FEIS (Appendix A, p. 3.5-1 et seq.) describes the context for the BLM's consideration of environmental justice impacts, including with respect to minority populations and low income populations within a study area consisting of a 6-mile radius of the center of the approved site. For purposes of analyzing environmental justice impacts of the Modified Project and alternatives, the study area is the same area that was evaluated in the PA/FEIS. This analysis of the Modified Project and alternatives relies on that discussion and updates it to reflect changes that have occurred since publication of the 2010 PA/FEIS; namely, that new Census data are available since 2010 and may provide a more accurate reflection of current demographics in the study area than those relied on in the 2010 PA/FEIS.

Minority Populations

According to the Council on Environmental Quality (CEQ), minority individuals are defined as members of the following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. A minority population, for the purposes of environmental justice considerations, is identified when the minority population of the potentially

affected area is greater than 50 percent or meaningfully greater than the percentage of the minority population in the general population or other appropriate unit of geographical analysis (CEQ, 1997).[1]

Table 3.15-7 presents the minority population composition of the planning areas surrounding the project site, based on the 2010 Census. Data are provided for Riverside County, Census tract (CT) 469 (which forms the main part of Chuckwalla CCD and includes the communities of Mesa Verde and Nicholls Warm Springs, south of the Blythe Airport), CT 9810 (which represents the two state prisons), Blythe CCD, City of Blythe, La Paz County (AZ), and Colorado River Indian Reservation (located mostly in La Paz County). Minority population, defined as racial or ethnic groups other than non-Hispanic White, represents from 37.3 percent of total population in La Paz County to 81.5 percent in CT 9810. Minorities represent 57.3 percent of the total population in CT 469, the planning area in which the BSPP site is located. This is close to the proportion of minority population in Riverside County as a whole, which is 60.3 percent. Thus, in all planning areas around the project site, with the exception of La Paz County, the minority population exceeds 50 percent of the total population. These areas are therefore considered minority communities of concern for the purposes of this analysis.

Hispanic and Latino populations make up most of the minority populations in these areas, ranging from 52.3 percent in CT 469 to 54.3 percent in Blythe CCD. For Riverside County as a whole, Hispanic and Latino population represents 45.5 percent of total population, and in La Paz County, 23.5 percent.

Low-Income Populations

Unlike the CEQ (1997) guidance on minority populations, none of the environmental justice guidance documents contain a quantitative definition of what proportion of low-income individuals defines a low-income population. In the absence of guidance, this analysis relies on the density used to identify a minority population as “meaningfully greater” than the general population also to identify low-income populations. Thus, if the proportion of individuals living under the poverty line is 150 percent or more than that of the general population, this analysis considers that community to be a low-income population.

For this analysis, proportions of people living in poverty were obtained from the 2007-2011 American Community Survey (U.S. Census Bureau, 2012). The U.S. Census Bureau defines poverty using standards set by the U.S. Office of Management and Budget’s Statistical Policy Directive 14 (U.S. Office of Management and Budget, 1978; U.S. Census Bureau, 2011a). Family income is compared to thresholds that vary according to family size, age, and number of children under 18 years old. If a family’s total income is less than the applicable threshold, then every person in the family is considered to be in poverty. Poverty thresholds are the same for all geographic areas and are adjusted annually by the Consumer Price Index. The U.S. Census Bureau does not define poverty status for institutionalized persons and others living in group quarters.

[1] According to the CEQ guidelines, “Minority” is defined as all persons except non-Hispanic whites. In other words, minority is defined as all racial groups other than white, and all persons of Hispanic origin, regardless of race.

TABLE 3.13-7
RACIAL AND INCOME CHARACTERISTICS FOR RESIDENTS WITHIN THE STUDY AREA

	Riverside County, CA	CT 469[a]	CT 9810[b]	Blythe CCD, CA[c]	Blythe City, CA[d]	La Paz County, AZ[e]	Colorado River Indian Reserva-tion, AZ-CA[f]
Total Population	2,189,641	2,043	7,634	15,045	20,817	20,489	8,764
Hispanic or Latino (All Races)	45.5%	52.3%	51.6%	54.3%	53.2%	23.5%	34.6%
Non-Hispanic							
White	39.7%	42.7%	18.5%	34.2%	28.3%	62.7%	37.6%
Black or African American	6.0%	1.7%	26.0%	7.7%	14.5%	0.6%	0.7%
American Indian and Alaska Native	0.5%	0.6%	0.9%	0.6%	0.7%	10.7%	23.6%
Asian	5.8%	0.6%	0.7%	1.6%	1.4%	0.4%	0.4%
Native Hawaiian and Other Pacific Islander	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
Some Other Race	0.2%	0.2%	2.0%	0.0%	0.8%	0.1%	0.0%
Two or More Races	2.2%	1.9%	0.1%	1.4%	1.0%	2.0%	3.0%
Percent Minority (Other Than Non-Hispanic White)	60.3%	57.3%	81.5%	65.8%	71.7%	37.3%	62.4%
Percent of People Below Poverty Level	14.2%	25.2%	n.a.[g]	16.7%	15.1%	19.4%	24.5%

NOTE: All population, race, and ethnicity data are from 2010 Census; data on poverty level from American Community Survey (most recent data, as applicable).

[a] Rural areas of Chuckwalla Valley CCD; excludes state prisons and Colorado River Indian Reservation.
[b] Census tract covers Ironwood and Chuckawalla Valley State Prisons only.
[c] Formerly Palo Verde CCD; excludes state prisons.
[d] Incorporated Blythe city; includes Ironwood and Chuckawalla Valley state prisons.
[e] Includes the part of Colorado River Indian Reservation that is located in Arizona.
[f] Includes portions of California and Arizona.
[g] The American Community Survey (ACS) does not define poverty for institutionalized persons.

SOURCE: U.S. Census Bureau, 2010, 2012

In 2010, the poverty threshold for a single person under 65 years of age was $11,702 and for a person 65 years and over was $10,788. For a four-person family with two children under 18 years of age, the poverty threshold was $22,811. Other thresholds are defined for different family sizes and compositions (U.S. Census Bureau, 2011b).

As shown in Table 3.13-7, 25.2 percent of all people in CT 469 belonged to families with income below the poverty level (U.S. Census Bureau, 2012). This was the highest proportion among planning areas examined for this analysis. By comparison, 16.7 percent of people in Blythe CCD belonged to families with income below the poverty level, 15.1 percent in the City of Blythe (excluding institutionalized persons), 14.2 percent in Riverside County, 19.4 percent in La Paz County (AZ), and 24.5 percent in the Colorado River Indian Reservation. Both CT 469 and the Colorado River Indian Reservation therefore had more than 150 percent of the concentration of people living below the poverty level compared to Riverside County as a whole, and both are considered low-income communities of concern for the purposes of this analysis.

3.13.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards governing socioeconomics and environmental justice considerations are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project tiers to and relies on those summaries.

3.13.3 Analytical Methodology

Sections 4.13.1 and 4.5.1 of the 2010 PA/FEIS (Appendix A, pp. 4.13-1, 4.5-1) describe the impact assessment methodologies relied upon to analyze the impacts of the Approved Project on socioeconomics and environmental justice, respectively. This analysis of impacts of the Modified Project and alternatives relies on the same methodologies. For purposes of estimating the indirect economic impacts associated with construction- and operation-phase expenditures resulting from the Modified Project and alternatives, this analysis relies on an updated input-output model (IMPLAN) based on that of the Approved Project, but updated by the Grant Holder to reflect current economic conditions and inputs specific to the Modified Project and alternatives. For Alternative 2, this analysis scales the results of the IMPLAN analysis generated for the Approved Project.

Additionally, this EIS examines the potential effects on Indian tribes that could result from the direct or indirect effects of the Modified Project or Alternative 2 on cultural resources. The Colorado River Indian Reservation is identified as a community of concern for environmental justice impacts based on both minority and low-income population, as described in Section 3.13.1. Additionally, Native Americans living in the region, whether or not they are part of the reservation population, represent a community that may be at risk for environmental justice impacts related to effects on cultural resources.

3.13.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none specifically address socioeconomics or environmental justice as analyzed in this section. DF SOCIO-1 requires the submittal of a “No Trespassing” letter to the Riverside County Sheriff; the potential for trespassing is not within the scope of the socioeconomics and environmental justice analysis.

3.13.5 Environmental Consequences

3.13.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Socioeconomic Effects

Construction

Housing and Community. The Modified Project could result in socioeconomic impacts primarily due to construction employment. Construction would be temporary and is expected to last for approximately 48 months. Because the project site does not currently support economic uses,

construction would not displace any economic activity. The locations from which construction workers would commute to the site are a key factor determining the extent of potential impacts to the local economy and communities. Income from employment primarily would benefit the communities in which the construction workers and their families reside because this is where most household expenditures occur.

The number of personnel on-site would average approximately 340 workers, with a peak of up to 500 workers in Months 19 through 22. Most construction workers are expected to come from western Riverside County, where, along with San Bernardino County, a substantial number of workers in relevant occupations reside (nearly 67,000 workers; Table 3.13-5). It is possible, however, that some workers will come from the Blythe area or La Paz County, Arizona.

The Modified Project is not anticipated to result in direct impacts related to the availability of labor within the 2-hour travel distance, but may result in indirect impacts on labor outside of this area by reducing the number of workers available to meet other projects' demands. Such potential impacts are described in more detail in Section 3.13.4.3, *Cumulative Effects*.

With the exception of eastern Coachella Valley, most of western Riverside County is 2 hours or more travel time away from the project site. Because construction would be temporary, it is not expected that workers from outside the Blythe area would relocate to Blythe permanently in order to work at the site, and therefore would not contribute to population growth in the local area. Some workers may engage in "weekly commuting," in which they find temporary or transient housing closer to the jobsite during the workweek. It is expected that such workers would seek temporary housing in the Blythe area, where both rental housing as well as a large number of hotel or motel rooms would be available. Any such workers who choose to reside temporarily in the local area would have a limited service impact on local public services and infrastructure.

According to the 2010 Census, there were 248 housing units for rent in the City of Blythe and an additional 81 units in the surrounding Blythe CCD (Palo Verde Valley and Mesa). There were also 47 units in the community of Ehrenberg and 78 in Quartzsite for a total of 454 rental units (Table 3.13-2). There were also 100 units for sale in the City of Blythe and 22 units in Ehrenberg. As indicated in Section 3.15, in 2008 a total of 296 vacant hotel and motel rooms were available for rent in the local study area. In addition, there are in Blythe and surrounding areas numerous RV facilities, mobile home sites, and campgrounds, which could provide alternative forms of temporary housing. Thus, there would be a sufficient supply of temporary housing options to accommodate workers who may seek temporary housing near the jobsite.

Regional Employment and Economy. With unemployment rates of 12.2 percent in Riverside County and 9.2 percent in La Paz County as of 2012, employment of workers for construction would have a beneficial effect in helping to reduce unemployment.

Employment and resulting labor income also would have beneficial effects in Riverside County as a whole. Construction workers' wages and salaries would provide additional income to the area, as would expenditures within the local and regional study areas for construction materials and services. An IMPLAN input-output model was used to estimate the economic impacts of the Modified Project within Riverside County based on the construction-phase expenditures that would

be expected to occur within the regional study area. Starting with expenditures or employment for a given project, also called the *direct* impact, an input-output model represents major inter-industry (i.e., business-to-business) transactions in the region of interest, as well as transactions with households, government, and import/export with economies outside the region. Multipliers derived from the model can be used to estimate *indirect* impacts (business-to-business, or supplier, transactions following expenditures by a project) and *induced* impacts (expenditures by households of workers employed by the project and by the chain of suppliers to the project). The sum of direct, indirect, and induced impacts represents the total economic or employment impact to the region. For purposes of this analysis, Riverside County is the region of interest, since almost all workers are expected to come from the County. Table 3.13-8 summarizes the IMPLAN analysis findings.

TABLE 3.13-8
MODIFIED PROJECT CONSTRUCTION ECONOMIC BENEFITS

Benefit		Total	Annual
Direct	Labor Income	$173,200,000	$43,300,000
	Materials and Supplies	$17,200,000	$4,300,000
	Jobs (monthly avg)		348
Indirect	Economic Output	$1,964,000	$491,000
	Jobs		9
Induced	Economic Output	$45,600,000	$11,400,000
	Jobs		271
Total	Economic Output	$237,964,000	$59,491,000
	Jobs		628
Taxes	State and local sales taxes	$3,868,000	$967,000

NOTE: Region is Riverside County. Income and output are in 2011 dollars.
Values may not add to totals as shown due to rounding. All values are approximate.

SOURCE: NextEra Blythe Solar, LLC, 2013, Table 2.

As shown in Table 3.13-8, including direct, indirect, and induced effects, total employment impact is estimated to be 628 jobs (most of which are expected to go to Riverside County residents); and the total construction period economic output is estimated at $238 million.

Operation and Maintenance

Housing and Community. During operation and maintenance, the Modified Project would employ up to 20 permanent, full-time personnel. In contrast to construction employment, it is expected that these workers would be either hired locally or, if hired from outside the Blythe area, would relocate permanently to the area. Due to the numbers of vacant homes in Blythe for sale (100 units) or for rent (248 units), there would be minimal impact to the local housing supply or the community, even if all permanent workers were to relocate to the Blythe area. Therefore, the Modified Project would not directly induce substantial population growth through the creation of a substantial number of new permanent jobs.

The Modified Project would not indirectly induce substantial population growth by introducing a new source of electricity because, although it would produce additional electricity and increase service capacity, it is intended to meet the demand for energy that is already projected based on growth in demand for electricity in SCE's service area, which extends well beyond the regional study area, and therefore would not induce substantial growth or concentration of population in either the regional or local study areas.

Regional Employment and Economy. The employment of up to 20 workers for operation and maintenance would not adversely affect the regional labor market, but instead would have a beneficial effect, particularly for Riverside County.

For input-output analysis, it is assumed that the operating staff would consist of at least 14 production technicians and one high-voltage technician; although the Grant Holder anticipates that up to 20 full-time workers would be employed, the economic benefit analysis conservatively assumed that only 15 jobs would be created during operation and maintenance to avoid overstating long-term benefits. Table 3.13-9 shows that, based on this assumption, total employment impact in the County, including direct, indirect, and induced impacts, would be 24 workers, with a total economic output impact of approximately $1.9 million per year.

TABLE 3.13-9
MODIFIED PROJECT OPERATION ECONOMIC BENEFITS

Benefit		Annual
Direct (Spending and Employment)	Labor Income	$1,400,000
	Materials and Supplies	$150,000
	Jobs	15
Indirect	Economic Output	$10,000
	Jobs	0
Induced	Economic Output	$368,000
	Jobs	9
Total	Economic Output	$1,946,000
	Jobs	24
Taxes	Possessory interest tax	$215,000
	State and local sales taxes	$39,791

NOTE:
Region is Riverside County. Income and output are in 2011 dollars.
Values may not add to totals as shown due to rounding. All values are approximate.

SOURCE: NextEra Blythe Solar, LLC, 2013, Table 2.

Decommissioning

At the expiration of the ROW grant and permits, the Modified Project would be decommissioned, with all equipment and improvements dismantled and removed from the site, and the site would be restored to an undeveloped condition. The workforce and length of time for decommissioning

is expected to be similar to or reduced compared to that of the construction period. It is difficult to forecast housing and employment conditions 30 or more years into the future; however, based on growth projections shown in Table 3.13-5, it is expected that the available labor pool would be greater than existing conditions. Similar to Project construction, the temporary decommissioning workforce would likely come mostly from Riverside County. Many workers would likely commute to the project site. For workers who choose to commute weekly or temporarily relocate to the local area during the workweek, it is expected that sufficient numbers of rental properties and hotel and motel accommodations would be available in the area, and that the needs of the temporary decommissioning workforce would not have an adverse effect on housing. No substantial sales or property tax revenues would be generated during or after decommissioning.

Environmental Justice Effects

The environmental justice review determined that during the construction, operation and maintenance, and decommissioning phases of the Modified Project, impacts related to air resources, geology and soils, hazards and hazardous materials, and noise would be limited to a small area surrounding the project site and would not affect people that may be members of communities of concern to the environmental justice analysis. The potential for human health and environmental impacts associated with the Modified Project to result in disproportionately high and adverse impacts on local and regional communities is described below. In each instance, impacts from decommissioning would be similar to those from construction.

Biological and Cultural Resources

As described in Section 3.6, *Cultural Resources*, no places were identified within the project site where plants are gathered for use in traditional medicines and ceremonies or artisan materials are found, or where traditional subsistence systems are located. Additionally, no cultural resources of importance to Indian tribes have been identified that would be affected by the Modified Project. Therefore, the Modified Project is not expected to result in impacts related to the use of the sites' specific biological and cultural resources that would have disproportionately high and adverse impacts on communities of concern. The BLM's ongoing consultation with Indian tribes is described in Chapter 4.

Recreation

The approximately 7 miles of OHV routes that are closed within the existing ROW would remain closed for the duration of the Modified Project. (Unlike for the Approved Project, however, public access through the solar plant site would be available if the Modified Project were approved). Additionally, the project site itself would not be available for dispersed recreational use. However, these recreational resources serve and are accessible to all residents of the region, and alternative recreational sites also are accessible and available to these residents. Therefore, this impact is not anticipated to be disproportionately high and adverse for the communities of concern.

Socioeconomic Effects and Economic Conditions

As described above, expenditures related to project construction are expected to result in beneficial economic impacts to the surrounding region. The BLM has no information suggesting

that minority populations would not have equal access to project-related job opportunities. If that were the case, some of the Project's potential economic benefits could be disproportionately distributed to non-minority workers and communities; however, there is no indication that this would occur.

The need for temporary housing for construction workers may increase demand for vacant housing and for short-term lodging facilities (hotels, motels, and camping sites). Similarly, the need for housing for permanent employees who may relocate to the local area also could increase the demand for housing to be purchased or rented. Such demands would result in positive impacts to owners of available vacant housing and short-term lodging, and negative impacts to those seeking to relocate into the surrounding areas by limiting the availability of remaining housing options. This is not considered likely to be a disproportionately high or adverse impact to populations in the communities of concern because there is no indication that residential neighborhoods in the communities of concern would be unequally affected by an increase in demand for either temporary or permanent housing.

Transportation

As described in Section 3.16, *Transportation and Travel Management*, construction-related traffic, both from worker commuting and transport of materials, temporarily would increase traffic levels on I-10, Mesa Drive, and the access road to the project site. Operation and maintenance of the Modified Project also would result in a minor increase in traffic. No project-related traffic increases would reduce the level of service (LOS) of I-10 in this area or cause traffic levels that would exceed the capacity of local roadways. These impacts would not be disproportionately high or adverse for populations within the communities of concern in the secondary study.

Visual Resources

As described in Section 3.17, *Visual Resources*, construction of the Modified Project would result in short-term impacts from construction lighting and visible dust plumes, and adverse effects from large-scale visual disturbance in the landscape resulting from construction activities and equipment. During operation and maintenance, the Modified Project may be a source of adverse visual impact as a large-scale visual disturbance that would introduce industrial components and facilities to the landscape. Due to the project site's distance from populated areas, these impacts would not be disproportionately high or adverse for communities of concern.

Water Resources

As described in Section 3.18, *Water Resources*, construction, operation and maintenance, and decommissioning would not result in adverse groundwater supply impacts, nor would it result in wastewater discharges that could affect drinking water supplies or other water bodies. It could result in water quality impacts from the accidental release of water pollutants, such as surface sediments. Mitigation measures described in that section would reduce these impacts. The Modified Project would not result in disproportionately high or adverse effects for communities of concern because it would not adversely affect water resources.

3.13.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Socioeconomic Effects

Housing and Community

Alternative 2 would employ an average of about 360 workers, with a peak of approximately 600. For the same reasons described in Section 3.13.4.1, it is expected that there would be a sufficient supply of temporary housing options to accommodate this anticipated temporary employment.

During operation and maintenance, Alternative 2 would employ approximately 130 permanent, full-time personnel. In contrast to construction employment, it is expected that these workers would be either hired locally or, if hired from outside the Blythe area, would relocate permanently to the area. Due to the numbers of vacant homes in Blythe for sale (100 units) or for rent (248 units), Alternative 2 could result in an adverse impact to the local housing supply if most or all permanent workers were to relocate to the Blythe area by reducing the number of available housing units for others seeking housing in the area and/or by causing an increase in the price of housing due to a rise in demand. However, it is anticipated that many permanent positions could be filled locally, reducing the need for workers to relocate to the area. Therefore, it is not anticipated that Alternative 2 would directly induce substantial population growth through the creation of a substantial number of new permanent jobs.

Additionally, for the same reasons described for the Modified Project, Alternative 2 would not indirectly induce substantial population growth by introducing a new source of electricity.

Regional Employment and Economy

The IMPLAN input-output model results for the Approved Project were scaled down to 60 percent of their original values to estimate the economic impacts of Alternative 2. Table 3.13-10 summarizes the construction-phase economic benefits of Alternative 2, and Table 3.13-11 summarizes those of the operation and maintenance phase.

As shown in Tables 3.13-10 and 3.13-11, including direct, indirect, and induced effects, total construction-phase employment impact is estimated to be 640 jobs (most of which are expected to go to Riverside County residents); and the total construction period economic output is estimated at $477.6 million; operation and maintenance-phase employment impact would be 177 jobs, and total economic output would be $16.9 million. Additionally, Alternative 2 would contribute to regional and local economies through the payment of property taxes and state and local sales taxes. The decommissioning phase is anticipated to result in similar effects with respect to housing, employment, and economic benefits to those estimated for the construction phase. However, no substantial sales or property tax revenues would be generated during or after decommissioning.

TABLE 3.13-10
ALTERNATIVE 2 CONSTRUCTION ECONOMIC BENEFITS

Benefit		Total	Annual
Direct	Labor	$243,600,000	$60,900,000
	Materials, equipment and services	$36,000,000	$9,000,000
	Jobs (monthly avg)	362	n/a
Indirect	Economic Output	$51,720,000	$12,930,000
	Jobs	65	n/a
Induced	Economic Output	$146,280,000	$36,570,000
	Jobs	212	n/a
Total	Economic Output	$477,600,000	$119,400,000
	Jobs	640	n/a
Taxes	State and local sales taxes	$5,940,000	$1,485,000

NOTE: Region is Riverside County. Income and output are in 2010 dollars.
Values may not add to totals as shown due to rounding. All values are approximate.

SOURCE: BLM, 2010, Table 4.13-2; ESA, 2013

TABLE 3.13-11
ALTERNATIVE 2 OPERATION AND MAINTENANCE ECONOMIC BENEFITS

Benefit		Annual
Direct	Labor	$5,640,000
	Operation and maintenance supplies	$5,760,000
	Jobs (monthly avg)	133
Indirect	Economic Output	$1,380,000
	Jobs	10
Induced	Economic Output	$4,140,000
	Jobs	35
Total	Economic Output	$16,920,000
	Jobs	177
Taxes	Property taxes	$240,000
	State and local sales taxes	$960,000

NOTE: Region is Riverside County. Income and output are in 2010 dollars.
Values may not add to totals as shown due to rounding. All values are approximate.

SOURCE: BLM, 2010, Table 4.13-4; ESA, 2013

Environmental Justice Effects

Alternative 2 would have human health and environmental impacts similar to or slightly greater than those of the Modified Project with respect to air resources, geology and soils, hazards and hazardous materials, and noise, as described in the impact analyses for these resources throughout Chapter 3 of this EIS. These impacts would be limited to a small area surrounding the project site and would not affect people that may be members of communities of concern to the environmental justice analysis.

Additionally, because it would result in an incrementally greater area that would be disturbed and inaccessible to the public, with respect to biological and cultural resources, recreation, water resources, and visual resources, Alternative 2 would have a slightly greater potential to affect people that may use the site or water resources that could be adversely affected by activities on the site. However, for the same reasons described for the Modified Project, this would not result in disproportionately high or adverse effects for members of the communities of concern.

Because Alternative 2 would have a slightly larger construction workforce and a larger operation and maintenance workforce compared to the Modified Project, it would result in greater socioeconomic and transportation-related effects. However, for the same reasons described for the Modified Project, this would not result in disproportionately high or adverse effects for members of the communities of concern.

3.13.5.3 Cumulative Effects

Because no environmental justice impacts have been identified for the Modified Project or Alternative 2, no potential contribution to a cumulative environmental justice impact is anticipated.

The potential for cumulative social and economic impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules and/or project operations that could affect similar resources. Projects with overlapping construction schedules and/or operations could collectively result in a demand for labor that cannot be met by the region's labor pool, which could lead to an influx of non-local workers and possibly their dependents. This population increase could impact social and economic resources if there are insufficient housing resources and/or infrastructure and public services to accommodate the new residents' needs.

Section 3.1 identifies current and reasonably foreseeable solar and non-solar projects that have been or could be developed within eastern Riverside County. While a large number of projects may be planned, and so considered to be possible for future development, not all of them are expected actually to be built due to construction funding constraints, schedule, delays, or other factors. Given the uncertain and challenging economic circumstances facing federal and state economies as well as private developers, it is far from assured that future funding and other necessary support will be sufficiently available for all of the proposed projects to be realized within the projected schedules.

As shown in Tables 3.1-1 and 3.1-2, nine renewable energy projects have been approved or are under review within eastern Riverside County. In addition, other non-renewable energy projects

could require workers with similar skills to those that would be employed by the Modified Proejct or Alternative 2, including transmission projects and numerous residential developments that have been proposed within the City of Blythe. The geographic scope of the cumulative impacts analysis includes populated areas within a 2-hour commute distance of the projects considered for this analysis. The temporal scope includes the construction, operation and maintenance, and decommissioning phases of the Modified Project or Alternative 2. The approved or reasonably foreseeable projects that may be under construction during construction of the Modified Project or Alternative 2 include the Desert Sunlight, Rice, McCoy, Desert Harvest, Eagle Mountain, Desert Center 50, Blythe Mesa Solar I, Palen Solar, and Quartzsite Solar Energy projects. Additionally, the Genesis Solar Energy Project is expected to be operational prior to the start of Modified Project or Alternative 2 construction, but would contribute to labor demand during the operation and maintenance phase. Although the 2-hour commute distance would extend into Arizona, the low population in western Arizona would contribute minimally to the available labor pool in the geographic scope. Therefore, the analysis for employment focuses on the California portion of this area.

The cumulative analysis conservatively assumes that the construction of the nine projects listed above (i.e., all but Genesis) would be under construction within the 48-month temporal scope for construction-related impacts of the Modified Project or Alternative 2.

Construction

Cumulative Construction Labor Needs

Table 3.13-12 shows the currently available data about project construction workforces for the projects in the cumulative scenario.

Because the precise construction schedules for each project are currently unknown, this analysis assumes that the peak construction periods of the solar projects in the cumulative scenario would be of a similar length to the Modified Project (approximately 4 months). Project developers would likely seek to minimize the construction occurring during the hottest summer months and may therefore stagger their construction periods accordingly. Consequently, some seasonality may be expected to occur as developers favor more construction during the region's cooler winter months. It is assumed that peak construction needs for each of the solar projects would be approximately evenly spread throughout the 48-month period for cumulative construction-related impacts. If all of the projects experienced their peak construction during the 48-month cumulative temporal scope, the regional labor need for a realistic but conservative estimate would be for two to three projects to have peak labor needs during the same winter season. Therefore, this analysis assumes that the equivalent of three solar projects could experience peak construction at one time, while the others may experience average construction employment levels. This gives an average cumulative solar workforce of approximately 4,000 workers.[2] Under the extremely improbable circumstance that peak construction of all 10 planned solar projects listed in Table 3.13-2 happens concurrently, they would require a maximum of approximately 6,000 construction workers at one time.

[2] Final cumulative workforce estimates are rounded to reflect the uncertainty that results from making assumptions about projects for which employment and/or schedule data is not currently available.

TABLE 3.13-12
AVERAGE AND PEAK CONSTRUCTION EMPLOYMENT FOR CUMULATIVE SCENARIO SOLAR PROJECTS

Project	Average Workers	Peak Workers
Modified Project	340	500
Desert Sunlight	450	570
Rice	280	438
McCoy	341	750
Desert Harvest	100	250
Eagle Mountain	100	209
Desert Center 50	35	60
Blythe Mesa Solar I	300	500
Palen	998	2,311
Quartzsite	280	450
Total	**3,224**	**6,038**

NOTE: Employment information for the Desert Center 50 Project was unavailable; average and peak workforces for this project were estimated based on the ratio of workers to installed MW of other solar PV projects in the cumulative analysis.

SOURCE: BLM, 2011a, 2011b, 2012a, 2012b, 2013; CEC, BLM, and WAPA, 2010; FERC, 2012, Riverside County Planning Department, 2011.

Because it is likely that not all of the cumulative projects would be under construction for the entire 48-month construction period, the actual cumulative construction workforce may be lower. However, it is reasonable to assume that other future projects that are not yet known for this cumulative scenario may begin construction later in this time period. For this reason, a rounded winter-season peak of approximately 4,000 construction workers is used in this analysis.

The Modified Project's maximum potential contribution to this cumulative effect would be approximately 12.5 percent during its own peak construction period. The Modified Project's average contribution to the cumulative impact would be approximately 9 percent during its non-peak construction. Because Alternative 2 would require an average of 360 and a peak of 600 workers, its maximum potential contribution would be approximately 9 percent during its non-peak construction and 15 percent during its peak construction.

Regional Labor Force Supply

As Table 3.13-5 illustrates, the total work force of skilled construction workers currently living in the Riverside-San Bernardino-Ontario MSA is estimated to be approximately 66,910. Assuming that these workers are distributed throughout the MSA in the same proportion as the total population, the total construction work force within Riverside County would be approximately half of this, or 33,455 workers, and the total within eastern Riverside County would be approximately 8,700, or 13 percent of the MSA. Future demand for 4,000 construction workers would not exceed the capacity of the current skilled labor force.

The current unemployment rate in Riverside County is estimated to be 12.2 percent (see Table 3.13-4). Applying this rate to the skilled construction workers in eastern Riverside County yields an estimate of approximately 1,060 unemployed construction workers, and in all of Riverside County, 4,080 unemployed workers. The cumulative construction worker demand would represent a greater number than the locally available labor, and approximately the same number that is available in the county as a whole. Although many of the region's currently unemployed residents may not be willing or able to acquire the necessary skills required to serve the cumulative labor demand, many residents could be trained to be employable by these projects. Further, some of the construction work would be more entry-level positions which may be suitable for less skilled workers.

Some of the regional workforce currently employed in other sectors also could have the capabilities to qualify for project construction work. In such cases, some job transferring may occur, particularly because the construction jobs may be expected to be relatively well-paid and attractive for many local residents. The less skilled or desirable jobs vacated by individuals transferring to construction work could be filled by other less skilled unemployed residents.

Housing and Lodging Impacts

Notwithstanding the potential for employed and unemployed non-construction workers to qualify for the construction jobs of the cumulative scenario, there could be a demand for construction workers that would exceed the available labor supply within the geographic scope. It is assumed that those job positions would be filled by workers relocating into the region from elsewhere.

Given the numerous variables discussed above, it is difficult to project the extent of future weekly commuting or other in-migration that would be necessary to meet the future cumulative labor needs within the region. However, considering that workers may commute from up to 2 hours away, it is assumed that up to approximately 3,000 construction workers could require temporary housing in the local area or within Riverside County.

Based on State Employment Development Department data (EDD 2013a, 2013b), the skilled construction labor force within San Bernardino County is estimated to be approximately equal to that of Riverside County. This suggests that there is likely to be a considerable additional potential labor force available willing to commute weekly or to relocate temporarily to Riverside County, most likely to communities near the BSPP and other project sites. Consequently, from a broader geographic and labor force perspective, no significant shortages of adequately skilled construction workers is foreseen, provide that adequate suitable housing is available for relocating near the work sites.

The cumulative influx in construction labor to the county could create demand for temporary housing that is greater than the existing supply of temporary lodging. Table 3.13-2 indicates that there are expected to be approximately 1,345 vacant rental units rooms available in the local area. Additionally, hotel and motel rooms may be available as described in the 2010 PA/FEIS (Appendix A, pp. 3.14-7 and 3.14-8). Assuming that about half of the construction workers might be willing to share accommodations to save on their lodging costs, the existing local rental units, hotels, and motels could be able to house up to two thirds of the construction workers seeking local

temporary housing. If these workers were willing to commute up to 2 hours to the site daily, the supply of vacant rental units and hotel and motel rooms increases substantially, and would be sufficient to temporarily house the approximately 3,000 construction workers that could move into the area as a result of the cumulative projects; however, any substantial unforeseen increase in worker demand or decrease in availability of lodging could exceed the capacity of the communities within the geographic scope to adequately house these workers.

Irrespective of the availability of temporary housing, it may be expected that, even under future cumulative conditions, a relatively small proportion of construction workers would choose to relocate permanently to the local communities where they would be employed during construction. This is because many construction workers could choose to commute relatively long distances to their work sites and may expect to seek work within the more populated areas of Riverside and San Bernardino Counties in the future.

Furthermore, during the same time period with the greatest potential for adverse impacts resulting from the cumulative demand for construction worker housing, there also would be a major positive economic stimulus to the Blythe area and eastern Riverside County economies associated with the solar development. This economic infusion could result in the construction or availability of additional rental units and so could offset a portion of the housing need-related impact.

In summary, there is potential for short-term adverse cumulative social and economic impacts in the Blythe area associated with the demand for skilled construction labor for the cumulative projects proposed for future development within eastern Riverside County. Analysis suggests that future construction labor demand could exceed the existing local work force within eastern Riverside County, under the unlikely scenario that all cumulative projects are constructed at the same time. Therefore, there may be increased demand for temporary local housing from construction workers seeking to commute weekly to the local area. Given the estimated availability of lodging and possible rental housing, it is expected that there may be a shortage of adequate and suitable housing to meet all future construction worker temporary housing demand. Therefore, some adverse social or economic impacts could result if the demand for housing increased the price for local residents seeking housing, and/or if hotel and motel vacancy rates fell such that rooms were not available for potential visitors to the area who would otherwise generate economic stimulus from vacation-related spending. However, much of this lost economic income would be offset by the income that would result from these projects.

Operation and Maintenance

As shown in Table 3.13-13, if full build-out of the planned development in the cumulative scenario occurs, the future cumulative operational employment in the region would be approximately 550. The PSEGS’s 100 operational jobs represent an approximately 18 percent contribution to the cumulative operation and maintenance related needs. It is not anticipated that the other non-solar projects considered for cumulative social and economic impacts (new electrical substations and new and expanded transmission lines) would contribute noticeably to the cumulative operational employment demand.

TABLE 3.13-13
OPERATIONAL EMPLOYMENT FOR
CUMULATIVE SCENARIO SOLAR PROJECTS

Project	Employees
Modified Project	20
Genesis	65
Desert Sunlight	15
Rice	47
McCoy	20
Desert Harvest	8
Eagle Mountain	30
Desert Center 50	3
Blythe Mesa Solar I	12
Palen	100
Quartzsite	45
Total	**365**

NOTE: Employment information for the Desert Center 50 Project was unavailable; average and peak workforces for this project were estimated based on the ratio of employees to installed MW of other solar PV projects in the cumulative analysis.

SOURCE: BLM, 2010, 2011a, 2011b, 2012a, 2012b, 2013; CEC, BLM, and WAPA, 2010; FERC, 2012, Riverside County Planning Department, 2011.

As shown in Table 3.13-3, there are 21,100 workers in the "Transportation, Warehousing & Utilities" industry group in Riverside County. In the absence of more precise data on available skills, this industry group is used as the available labor pool for this analysis. Although not all workers in this category may possess the skills required for solar power plant operation and maintenance, there would be opportunities for the transferability of other skills, on-the-job and local community college training and a lower skilled qualification requirement for some of the available jobs. Based on current unemployment rates, it is assumed that approximately 2,574 of these workers would be available to meet operational labor needs. Therefore, it is not expected that any in-migration of operational workers would be needed to meet the cumulative scenario's operational labor need, and there would be no cumulative impact during operation and maintenance on housing and lodging. Although Alternative 2 would require a larger operational workforce than the Modified Project, its additional contribution to the cumulative operational labor demand would be negligible.

Decommissioning

Evaluating the Modified Project's and Alternative 2's cumulative impacts when future facility decommissioning occurs is highly speculative. Decommissioning is expected to occur after approximately 30 years of operation. It is not possible to project with confidence the likely future social and economic conditions of the local and regional study area. Similarly, the extent to which the projects in the cumulative scenario would undergo decommissioning concurrently is unknown.

Nonetheless, decommissioning is expected to require a workforce similar to the construction phase, and the project is expected to be one of many similar solar projects within eastern Riverside County. As such, its contribution to cumulative social and economic effects would be proportional to its size relative to the other development projects in the region and the collective size of projects undergoing decommissioning or construction at that time. Although the cumulative effects of construction were found to be potentially adverse based on a shortage of temporary housing, decommissioning would not likely overlap with as many projects as construction, and in over 30 years' time, based on regional population growth trends, it is likely that there would be more local workers and more temporary housing options available to accommodate decommissioning needs.

3.13.5.4 Mitigation Measures

No mitigation obligations were imposed to address socioeconomic or environmental justice considerations for the Approved Project (see Appendix A, p. 4.13-27), and none are recommended for the Modified Project or Alternative 2. Therefore, residual effects of the Modified Project would be the same as the effects described in Section 3.13.5.1 and Section 3.13.5.3. Residual effects of Alternative 2 would be the same as the effects described in Section 3.13.5.2 and Section 3.13.5.3.

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3.14 Soil Resources

This section describes and evaluates potential impacts to soil resources for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that those that apply to the Modified Project differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures.

During the scoping of the Modified Project, Defenders of Wildlife et al. expressed concern regarding potential soil erosion due to the disruption of stabilized soils on the Palo Verde Mesa (see Appendix D). Only the approved gen-tie and distribution line are located on the Palo Verde Mesa, and these previously approved elements are not within the scope of the analysis in this Draft EIS. The 2010 PA/FEIS analyzed the potential for increased soil erosion as a result of these components of the Approved Project (Appendix A, pp. 4.14-1 through 4.14-5) and the 2010 ROD adopted mitigation measures to reduce the potential for soil erosion due to the disruption of soils (Appendix B, pp. B4-68 and B4-69). The Modified Project site is not located on the Palo Verde Mesa.

3.14.1 Environmental Setting

Section 3.15 of the 2010 PA/FEIS (Appendix A, p. 3.15-1 et seq.) describes the environmental context for the BLM's analysis of potential effects relating to the soil surface, including the flat topography of the Approved Project site, soil types (based on National Resource Conservation Service [NRCS] map units), and relative susceptibility to wind erosion. For purposes of analyzing soils-related impacts of the Modified Project and alternatives, the study area is a subset of the study area evaluated in the 2010 PA/FEIS due to the Modified Project's and Alternative 2's reduced solar plant site area within the approved ROW. Soil types and related conditions have not changed since the 2010 PA/FEIS was issued for the Approved Project.

As explained in the 2010 PA/FEIS (Appendix A, pp. 3.15-1, 3.15-2) and shown in 2010 PA/FEIS Figures 13a and 13b (Appendix A, pp. AA-17, AA-18), there are three STATSGO map units on the approved site: 1) the Rillito-Gunsight map unit, which is characterized by sandy loam soils with moderate susceptibility to wind erosion; 2) the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni map unit, which is characterized by soils with high percentage (>65 percent) of sand and a moderate susceptibility to wind erosion; and 3) the Rositas-Orita-Carrizo-Aco map unit, which is characterized by soils with high sand percentages and moderate susceptibility to wind erosion. As indicated in Table 3.14-1, the percentages of each type present on the site would change if the requested Level 3 variance were approved.

TABLE 3.14-1
ALLOCATION OF ON-SITE SOIL TYPES FOR THE MODIFIED PROJECT SOLAR FIELD

Map Unit	Approximate Acres within Modified Project Site	Location within Modified Project Site
Rillito-Gunsight	440	Northwestern portion
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni	2,310	Central one third
Rositas-Orita-Carrizo-Aco	1,360	Eastern one third

NOTE: Acreages are rounded to account for uncertainty.

3.14.2 Applicable Laws, Regulations, Plans, and Standards

Relevant laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.14.3 Analytical Methodology

Section 4.14.1 the 2010 PA/FEIS (Appendix A, p. 4.14-1) describes the impact assessment methodology relied upon to analyze the impacts of the Approved Project on soil resources. Because site conditions remain the same, neither the site-specific soil resources assessment nor the review of soil surveys were redone. This Draft EIS tiers to and relies on the soil map shown in Figure 3.14-1, which contains the same soil units divided along the same boundaries as the map shown in the 2010 PA/FEIS, but includes more complete names of the soil series mapped and shows soil units in the areas surrounding the project site. Soil erosion estimates were updated presuming that soil loss rates are directly proportional to the area of ground disturbance.

3.14.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to soil resources:

> **GEO-1** outlines the specific information the Soils Engineering Report, as required by Section 1803 of the 2010 CBC, shall include.
>
> **SOIL&WATER-1, Drainage Erosion and Sedimentation Control Plan**, requires the Grant Holder to implement an approved Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during construction and operation. It also outlines what information is required in the DESCP.

3.14.5 Environmental Consequences

3.14.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Erosion

As discussed in the 2010 PA/FEIS, wind and water erosion of soils occurs at the project site under existing conditions, sometimes significantly during infrequent floods. Disturbance of the ground surface during construction activities associated with the Modified Project would increase the potential for erosion of soil at the Modified Project site.

Construction of the Modified Project would include multiple types of grading, which vary in the degree of disturbance created. For the placement of solar module foundations, underground electric lines, inverter and transformer pads, on-site roads and access ways, and other facilities, grading and trenching will be required. Other types of grading expected to be used on site include "disc and roll" grading in select locations with highly variable terrain (rubber-tired farming tractors towing disc harrow equipment to break up the top 2 to 3 inches of soil, followed by a drum roller to flatten the ground surface) and micrograding, or "isolated cut and fill," which would use a scraper to flatten the ground surface in areas where existing grade cannot accommodate perimeter fencing, roads, or other equipment or structures. In areas where grading would occur, the ground surface would be devoid of vegetation. Soil particles would be relatively loosened, making it easier for wind and water to transport the soil.

Ground disturbance also would occur during installation of the solar arrays. One of two potential methods to construct support structures for the solar arrays would be used at the solar plant site. The first method involves driving, screwing, or grouting steel piles into the ground using tractor-sized machinery. In the second method the solar arrays would be supported by concrete foundations placed or poured on the ground surface. Installation of steel piles would not permanently disturb the ground surface and would require more ground penetration; concrete foundations would reduce the ground penetration but would increase the permanent disturbance to soil at the ground surface. In areas where grading would not occur, vegetation would not be removed, and the roots would remain intact resulting in less erosion potential for soils in these areas.

As noted in the Paleontological Resources Assessment for the Approved Project (included as Appendix E to the 2010 PA/FEIS, see Appendix A p. EE-1 et seq.), desert pavement surfaces[1] have formed on the Holocene and Pleistocene age Unit 3, which roughly corresponds to the Rillito-Gunsight soil unit. Construction of approximately one-half of Unit 4 of the Modified Project solar plant site is proposed on this soil unit. If the desert pavement is disturbed, the material underneath can erode relatively quickly. The Modified Project would result in disturbance, including some grading, within approximately 440 acres of the Rillito-Gunsight unit.

[1] Desert pavement is a protective layer formed on the ground surface as larger and heavier earth materials are left behind during wind erosion.

The potential for soil loss by wind erosion was estimated in the 2010 PA/FEIS using the Wind Erosion Prediction System (WEPS) for pre-development (undisturbed), during construction, and operational conditions for the Approved Project. The Approved Project would have graded the entire site, causing greater disturbance than the Modified Project, which would grade only portions of the site. This modeling accounted for the proposed use of soil stabilizers under the Approved Project. The modeled estimated soil losses due to wind erosion under disturbed conditions are included in Table 3.14-2, below. These numbers are assumed to be applicable to the estimated soil losses on the graded portions of the Modified Project, on which soil stabilizers also would be used (see DFs AQ-SC3 and AQ-SC7 in Table 2-6). On portions of the Modified Project that would not be graded, soil losses under disturbed conditions are expected to be closer to undisturbed conditions.

TABLE 3.14-2
ESTIMATE OF SOIL LOSS BY WIND EROSION

Soil Type	Predicted Soil Loss (tons per acre per year)		
	Undisturbed Conditions	Disturbed Conditions (Construction)	Operational Conditions
Rillito-Gunsight	88	71	38
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni	101	81	49
Rositas-Orita-Carrizo-Aco	539	553	296

SOURCE: PA/FEIS Table 4.14-1 (Appendix A, p. 4.14-2).

The potential for soil loss by water erosion was estimated in the 2010 PA/FEIS using the Universal Soil Loss Equation (USLE) for pre-development (undisturbed), during construction, and operational conditions for the Approved Project. The modeled estimated soil losses due to water erosion under disturbed conditions are included in Table 3.14-3, below. As described for wind erosion above, these estimates are applicable to graded portions of the site. As described in Section 3.18, Water Resources, under the Modified Project the Grant Holder proposes to maintain water flows across the site as under existing conditions as much as possible, and the majority of the site would not be graded. Therefore, on portions of the Modified Project that would not be graded, soil losses under disturbed conditions are expected to be closer to undisturbed conditions.

TABLE 3.14-3
ESTIMATE OF SOIL LOSS BY WATER EROSION

Soil Type	Predicted Soil Loss (tons per acre per year)		
	Undisturbed Conditions	Disturbed Conditions (Construction)	Operational Conditions
Rillito-Gunsight	0.42	0.92	0.84
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni	1.16	4.63	1.46
Rositas-Orita-Carrizo-Aco	0.23	0.51	0.23

SOURCE: PA/FEIS Table 4.14-2 (Appendix A, p. 4.14-2).

The wind erosion values calculated for the site during analysis of the Approved Project (see Appendix A, p. 4.14-2) indicate that during construction, only the Rositas-Orita-Carrizo-Aco Series type soils would exceed undisturbed conditions. During operational conditions, water-carried losses from all soil types would meet or exceed undisturbed conditions. Additionally, modeling shows soil erosion rates would increase for both construction and operation on all soil series except on the Rositas-Orita-Carrizo-Aco Series during the operations phase, which would revert to its undisturbed erosion rate.

As described in Section 3.14.4, DF SOIL&WATER-1 requires the implementation of an approved DESCP, a draft of which has been prepared by the Grant Holder. The draft DESCP outlines Best Management Practices (BMPs) that the Grant Holder would implement, which include scheduling ground disturbance during the dry season, preserving existing vegetation, and using soil binding agents. These BMPs would limit the availability of soil to wind or water erosion. As a result of these obligations, specific plans that would identify actions to be taken to avoid or mitigate long-term impacts related to water and wind erosion after decommissioning are required. Potential actions include a decommissioning-phase DESCP, revegetation and restoration of disturbed areas, post-decommissioning maintenance, collection and disposal of project materials and chemicals, and access restrictions.

3.14.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

If the Modified Project is denied, impacts to soil resources would be potentially more extensive than those anticipated for the Modified Project. Alternative 2 includes an additional approximately 360 acres to the west of the Modified Project that would be located on the Rillito-Gunsight soil unit as shown in Figure 3.14-1. Impacts related to implementation of mitigation measures to minimize soil erosion from wind and surface water are anticipated to be similar to but potentially more extensive than those associated with the Modified Project. Based on the soil loss rates for the Rillito-Gunsight soil unit shown in Tables 3.14-2 and 3.14-3, above, disturbance of this soil type would result in 71 tons per acre per year of soil loss during construction and 38 tons per acre per year during operation due to wind erosion, and 0.92 tons per acre per year of soil loss during construction and 0.84 tons per acre per year during operation due to wind erosion on the approximately 360 additional acres.

3.14.5.3 Cumulative Effects

The incremental impacts of the Modified Project and Alternative 2 on soil resources are discussed in Sections 3.14.5.1 and 3.14.5.2, above. Ground disturbance activities resulting from construction, operation, maintenance, and decommissioning of the Modified Project or Alternative 2 along with other past, present, or foreseeably future actions could result in a cumulative effect on soil resources.

The geographic scope of potential changes in soil erosion rates that could contribute to a cumulative effect when combined with those of the Modified Project or Alternative 2 is defined

by the watershed in which the project site is located and the geographic extent of the affected soil map units. Thus, the geographic scope for the analysis of this issue is the Palo Verde Watershed.

The greatest potential cumulative impacts to soil erosion would occur if either the construction or decommissioning phases of projects within the geographic scope were to occur concurrently. Potential cumulative impacts to soils as a result of increased soil erosion during the operation and maintenance phase of the Modified Project or Alternative 2 are discussed in Section 3.18.5.3 of this document.

The effects of past actions on soil erosion in the Palo Verde Watershed are described in Section 3.15 of the 2010 PA/FEIS (Appendix A, p. 3.15-1 et seq). Presently no grading activities included in the cumulative actions considered by this EIS (Tables 3.1-1 and 3.1-2) are occurring upstream or downstream of the project site. Currently, the only reasonably foreseeable project that could have cumulative effects on soil erosion is the McCoy Solar Energy Project. If construction or decommissioning of these projects were to occur concurrently, soil erosion could significantly impact soil resources in the Palo Verde Watershed. The McCoy Solar Energy Project, which is north of and adjacent to the project site, would disturb approximately 1,553 acres of the Rillito-Gunsight soil series and approximately 2,884 acres of the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni soil series (BLM, 2012).[2] Soils of these two types would also be disturbed by the Modified Project or Alternative 2.

No comprehensive soil mapping of the Palo Verde Watershed has been completed.

The BLM has received applications for development of the McCoy Soleil and Big Maria Vista Solar projects, both of which are proposed north of the Modified Project site; however, the preliminary PODs for these projects have not been determined or accepted as complete. If the application for one or both of these projects is completed before a Final EIS is issued for the Modified Project, the Final EIS could consider the potential contribution to cumulative effects to soil resources based on additionally generated information such as new soil mapping. It is recognized that the soil series that would be disturbed by these two projects are not currently known; however, based on the climate and surface geology, the soils that underlie these two projects could be at least one of the same series that the Modified Project or Alternative 2 would disturb. As initially conceived, McCoy Soleil would disturb up to 1,959 acres of soil; in turn, the Big Maria Vista project would disturb up to 2,684 acres. The maximum amounts of each soil series that could be disturbed by these projects combined with either the Modified Project or Alternative 2 are shown in Table 3.14-4, below. Table 3.14-4 is based on the maximum possible potential disturbance, regardless of likelihood, and overestimates the total cumulative soil disturbance by assuming that the McCoy Soleil and Big Maria Vista projects could contribute to soil disturbance within any of the three soil units that the Modified Project or Alternative 2 would disturb. This analysis will be refined if and when actual data and other information about the McCoy Soleil and Big Maria Vista projects becomes known.

[2] The Rillito-Gunsight soil series is referred to as the Gunsight-Rillito-Chuckwalla soil series, and the Vaiva-Quilotosa-Hyder-Cipriano-Cherioni soil series is referred to as the Cheriono-Hyder-Cipriano soil series in BLM, 2012.

TABLE 3.14-4
CUMULATIVE SCENARIO SOIL DISTURBANCE (APPROXIMATE ACRES)

Map Unit	Modified Project Contribution	Alternative 2 Contribution	Maximum Cumulative Disturbance
Rillito-Gunsight	440	800	7,000
Vaiva-Quilotosa-Hyder-Cipriano-Cherioni	2,310	2,310	9,840
Rositas-Orita-Carrizo-Aco	1,360	1,360	6,000

3.14.5.4 Mitigation Measures

Existing, approved mitigation obligations to address impacts to soil resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-63 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, modifications to the approved measures are not recommended for either the Modified Project or Alternative 2. Also, as described in Chapter 2 and Section 3.14.4, above, the Grant Holder has proposed to incorporate Mitigation Measures GEO-1 and SOIL&WATER-1 as project design features. Therefore, these actions are no longer considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in these measures shall also be submitted/reported to the BLM. No additional mitigation measures are recommended.

Because no new or modified mitigation measures are recommended, residual impacts related to soil resources would be the same as those described in Sections 3.14.5.1, 3.14.5.2, and 3.14.5.3.

TABLE 3.14-5
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR SOIL RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
GEO-1, SOIL&WATER-1	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

Bureau of Land Management (BLM), 2012. *McCoy Solar Energy Project Proposed Plan Amendment and Final Environmental Impact Statement: Volume 1 of 2*. December.

California Department of Conservation, 2012. *Riverside County Important Farmland 2010: Sheet 3 of 3*. January.

Hayhurst, C. A., and T.L. Bedrossian, 2010. *Geologic Compilation of Quaternary Surficial Deposits in Southern California, West Half of Blythe 30'x60' Quadrangle*. July.

3.15 Special Designations

This section describes and evaluates issues related to special designations for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received no scoping comments regarding special designations (Appendix D).

3.15.1 Environmental Setting

Section 3.16 of the 2010 PA/FEIS (Appendix A, p. 3.16-1 et seq.) describes the affected environment as it relates to special designations, including the five National Landscape Conservation System (NLCS)-designated wilderness areas in the vicinity of the approved site: The Palen-McCoy Wilderness is approximately 4 miles northwest of the site, the Big Maria Mountains Wilderness is approximately 7 miles northeast, the Rice Valley Wilderness is approximately 13 miles north, the Little Chuckwalla Mountains Wilderness is approximately 14 miles southwest, and the Riverside Mountains Wilderness is approximately 20 miles northeast. These Wilderness Areas are shown in 2010 PA/FEIS Figure 6 (Appendix A, pp. AA-9). No other NLCS-designated lands are present.

Section 3.16 also describes four Areas of Critical Environmental Concern (ACEC) in the vicinity of the approved site: the 4,100-acre Mule Mountains ACEC, located approximately 7 miles south of the site, was established to manage prehistoric resources; the 2,300-acre Chuckwalla Valley Dune Thicket ACEC, located approximately 9 miles southwest of the site, is managed for wildlife habitat, specifically that of the desert tortoise; the 3,600-acre Palen Dry Lake ACEC, located approximately 18 miles west of the site, was established to protect cultural resources; and the 4,500-acre Big Marias ACEC, located approximately 11 miles east of the site (in Arizona), was established to protect prehistoric archaeological features, including a high concentration of nationally significant intaglio features and sensitive plant species. These ACECs are shown in 2010 PA/FEIS Figure 6 (Appendix A, pp. AA-9). None of the other types of special designations identified in BLM Handbook H-1601 –Land Use Planning Handbook, Chapter III are present in the vicinity of the approved site.

This analysis of the Modified Project and Alternative 2 relies on the description of the affected environment provided in the 2010 PA/FEIS. Additionally, the project site is located in an area that has undergone recent wilderness characteristics reviews. The BLM evaluates lands with wilderness characteristics through the land use planning process and when analyzing new land use authorizations. Pursuant to Section 201(a) of the FLPMA, all Public Lands within the California Desert District were analyzed in the 1979 wilderness inventory process to determine whether they

possessed appropriate wilderness characteristics of size, naturalness, outstanding opportunities for solitude or primitive and unconfined type of recreation and other supplemental values. The approved site is contained within the CDCA Wilderness Inventory Units (WIU) #CDCA 325 and #CDCA 325B (hereafter referred to as WIU #325 and WIU #325B, respectively) (BLM, 1979). As described below, based on recent inventory, the lands within the approved site were determined not to possess wilderness characteristics.

3.15.1.1 CDCA Wilderness Inventory Unit #325

In 1979, WIU #325 was estimated to be 500,000 acres, and generally is bounded on the south by I-10, on the west by Highway 177, on the north by State Highway 62 and the Colorado River Aqueduct, and on the east by Midlands Road, the Arizona and California Railroad line, and a gas pipeline ROW to I-10.

The 1979 decision established 284,730 acres of WIU #325 as having wilderness characteristics. This block of land was called the Palen-McCoy Wilderness Study Area. The California Desert Protection Act of 1994 (CDPA) designated the Palen-McCoy Wilderness. The boundary for the wilderness was similar to the boundary of the wilderness study area. The remainder of WIU #325 was determined not to have wilderness characteristics. The approved site and immediately adjacent lands were included in this category of lands without wilderness characteristics.

In April 2011, the wilderness characteristics inventory of WIU #325 was updated and was used to determine whether public lands within the proposed Riverside East Solar Energy Zone (SEZ) have wilderness characteristics. The area in the vicinity of the Modified Project, identified as the East McCoy sub-unit (#325-1) is approximately 30,200 acres in size, of which about 27,640 acres are on public lands. It is generally bounded on the south by I-10, on the west by the foot of the McCoy Mountains, on the north by St. John’s Mine Road/Arlington Mine Road, on the east by Gas Line Road (Route 661085) to I-10. (BLM, 2011a)

In October 2011, based on this inventory, 11,925 acres (48.3 km^2) of WIU #325-1 on the eastern side of the SEZ (in the area of McCoy Wash) were found to have wilderness characteristics. These lands are not within the Approved Project site and therefore also are not within the boundary of the Modified Project or Alternative 2 (BLM, 2011b).

3.15.1.2 CDCA Wilderness Inventory Unit #325B

WIU #325B is located adjacent and east of WIU #325-1, as described above. The boundary between these two units in the vicinity of the approved site is Gas Line Road. In the 1979 inventory, the entire unit was found to not meet the criteria for wilderness characteristics, primarily due the lack of outstanding opportunities for solitude or a primitive and unconfined type of recreation.

In July 2010, BLM conducted a maintenance update of the wilderness characteristics of WIU #325B. Although a series of changes in conditions since 1979 were noted, the conclusion was that no changes in conditions have occurred that would warrant a finding that is different from the 1979 decision that wilderness characteristics were not present in the area (BLM, 2010).

3.15.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries for purposes of evaluating impacts to special designations.

3.15.3 Analytical Methodology

Section 4.15.1 the 2010 PA/FEIS (Appendix A, p. 4.15-1) describes the impact assessment methodology relied upon to analyze the Approved Project's impacts to special designations. This analysis of impacts of the Modified Project and alternatives to special designations relies on the same methodology. More specifically, this section was prepared using information from the CDCA Plan and the NECO Plan.

3.15.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6). However, none specifically address potential effects to special designations.

3.15.5 Environmental Consequences

3.15.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

The Modified Project would have no direct effect on special designations or lands with wilderness characteristics, since the approved site is not subject to any such designation or classification, and no new designations or amendments to existing designations are proposed. The Modified Project would generate noise during construction and dust during all phases. However, as discussed in Section 3.2, Air Resources, dust emissions would occur within the Modified Project fence line and drop off quickly with distance, with no direct effect on the wilderness areas or lands with wilderness characteristics described above in Section 3.15.1. Additionally, as discussed in Section 3.10, Noise, noise generated by the construction of the Modified Project would attenuate such that the sound would be barely audible to users of nearby lands with wilderness characteristics, or to users of the nearest wilderness area, Palen-McCoy Wilderness. The Modified Project could indirectly affect scenic values within these areas by converting open space to industrial development and generating dust that may be visible from these locations. According to the CDPA Section 103(d), "The Congress does not intend for the designation of wilderness areas in Section 102 of this title to lead to the creation of protective perimeters or buffer zones around any such wilderness area. The fact that nonwilderness activities or uses can be seen or heard from areas within a wilderness area shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area."

The Modified Project would not directly or indirectly affect the four ACECs located in the vicinity of the approved site (i.e., Mule Mountains, Big Marias, Chuckwalla Valley Dune

Thicket, and Palen Dry Lake) because no Modified Project activities would occur on any of these lands, and dust, noise, and other potential sources of indirect effects would occur too distant from these ACECs to cause impacts.

3.15.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Like the Modified Project, no special designations or lands with wilderness characteristics are present within the Alternative 2 site boundary. Although during some periods of construction, noise generated by Alternative 2 would be greater than that generated by the Modified Project due to high pressure steam blow, as described in Section 3.10, Noise, mitigation measures would ensure that noise from high pressure steam blow would attenuate such that it would be barely audible from the nearby lands with wilderness characteristics or from the Palen-McCoy Wilderness. Therefore, impacts to special designations would be substantially the same under Alternative 2 as for the Modified Project.

3.15.5.3 Cumulative Effects

Neither the Modified Project nor Alternative 2 would directly affect specially designated lands (designated wilderness or ACECs) or lands with wilderness characteristics, and therefore would not contribute to cumulative effects on these resources. Similarly, the Modified Project and Alternative 2 would not indirectly affect ACECs; such lands are not considered in the analysis of cumulative effects.

The geographic scope of the analysis for indirect effects to designated wilderness consists of the areas within the Palen-McCoy, Big Maria Mountains, Little Chuckwalla Mountains, Rice Valley, and Riverside Mountains wildernesses from which the project site is visible. The temporal scope includes all phases of the Modified Project, beginning with construction and ending after decommissioning. The effects of past actions are reflected in the discussion in Section 3.15.1 and Section 3.16 of the 2010 PA/FEIS (Appendix A, p. 3.16-1). Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1. The Modified Project or Alternative 2 may adversely affect scenic values in five designated wilderness areas: the Palen-McCoy, Big Maria Mountains, Little Chuckwalla Mountains, Rice Valley, and Riverside Mountains wildernesses, by the converting open space to industrial development and by the generation of dust during construction. The Modified Project, combined with present and reasonably foreseeable future actions, may result in an adverse effect on the visual quality of the region when viewed from wilderness areas. Alternative 2 would have slightly increased adverse visual effects in the cumulative scenario when compared to the Modified Project because Alternative 2 would result in 363 additional acres of industrial development and would generate more dust.

3.15.5.4 Mitigation Measures

No mitigation obligations were imposed to address the Approved Project’s impacts to special designations (see Appendix A, p. 4.15-2), and none are recommended for the Modified Project or Alternative 2. Therefore, residual effects of the Modified Project would be the same as the effects

described in Section 3.15.5.1 and Section 3.15.5.3, above. Residual effects of Alternative 2 would be the same as the effects described in Section 3.15.5.2 and Section 3.15.5.3.

References

Bureau of Land Management (BLM), 1999. California Desert Conservation Area Plan of 1980, as amended through 1999.

BLM, 1979. California Desert Conservation Area – Wilderness Inventory – Final Descriptive Narratives, March 31, 1979.

BLM, 2010. Memo to files; Chris Roholt, CDD/BLM, dated 7/19/2010; Wilderness Inventory Permanent File CDCA 325B: Maintenance of Wilderness Inventory pursuant to Sect 201(a) of FLPMA.

BLM, 2011a, Wilderness Inventory. CDCA Wilderness Inventory Unites #325; Two Units: East McCoy (325-1) and Palen Valley (325-2) as of April 26 and 27, 2011; Prepared by Environmental Sciences Division, Argonne National Laboratory, (June 27, 2011).

BLM, 2011b. U.S. Department of Energy (DOE), Supplement to the Draft; Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States; DES 11-49-DOE/EIS-0403D-S, October 2011. Pg. C-58.

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3.16 Transportation and Travel Management

This section describes and analyzes potential impacts to transportation and travel management for the Modified Project (Alternative 1) and Alternative 2. Issues related to potential hazards to drivers and air navigation are analyzed in Section 3.7, Hazards and Hazardous Materials. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received one scoping comment from Basin and Range Watch regarding impacts to public access (see Appendix D).

3.16.1 Environmental Setting

Section 3.17 of the 2010 PA/FEIS (Appendix A, p. 3.17-1 et seq.) describes major traffic routes and other roadways within the vicinity of the approved site (including I-10, Black Rock Road, Mesa Drive, and Hobsonway) as well as public transportation (including the Blythe Airport, bus routes, and bicycle and pedestrian facilities). For purposes of analyzing impacts of the Modified Project and alternatives to transportation and travel management, the study area is the same as the area evaluated in the 2010 PA/FEIS. This analysis of the Modified Project and alternatives relies on those discussions, and updates others to describe conditions that have changed since publication of the 2010 PA/FEIS. For example, the following text revisions are made to update descriptions in the 2010 PA/FEIS:

2010 PA/FEIS Table 3.17-1 (Appendix A, p. 3.17-4) described peak-hour traffic volumes on I-10 for the Approved Project. This information is updated as follows for the analysis of the Modified Project and Alternative 2:

TABLE 3.16-1
EXISTING (2012) PEAK-HOUR TRAFFIC VOLUMES AND LEVEL OF SERVICE

Roadway/Segment	Travel Lanes	Volume	Capacity	LOS
I-10 West of BSPP Site	4	2,850	8,000	A
I-10 East of BSPP Site	4	2,750	8,000	A

NOTES: Baseline volume information from California Department of Transportation (Caltrans) 2012 data.
Capacity represents approximate two-way capacity in vehicles per hour.

The first sentence at the top of 2010 PA/FEIS on page 3.17-5 is updated as follows to more-accurately describe the site access road: “Access to the site would be via a driveway leading from Black Creek Road, which connects to Dracker Drive just north of the Dracker Drive / Black Rock Road intersection.”

Finally, for the purpose of analyzing the Modified Project and Alternative 2, the information provided in the second sentence under Current Operations on 2010 PA/FEIS page 3.17-5 is updated as follows: "For the 12-month period ending in 2012, aircraft operations averaged 69 takeoffs or landing per day or more than 25,000 operations per year (Airnav, 2013)."

In addition to the above updates, this analysis addresses potential impacts to intersections in the immediate project vicinity. Table 3.16-2 presents existing (2012) peak hour intersection levels of service.

TABLE 3.16-2
EXISTING (2012) PEAK HOUR INTERSECTION LEVELS OF SERVICE

	AM Peak Hour		PM Peak Hour	
Intersection	**Delay**	**LOS**	**Delay**	**LOS**
I-10 Westbound Ramps/Mesa Drive	1.8	A	1.9	A
I-10 Eastbound Ramps/Mesa Drive	3.5	A	4.6	A
Black Rock Road/Mesa Drive/Hobsonway	2.3	A	2.7	A

NOTES: Existing conditions data for the I-10 ramp intersections from LLG Engineers, 2013, and for the Black Rock Road intersection from Wilson Engineering, 2009. Year 2009 traffic volumes expanded to Year 2012 at historical rates from years 2004 through 2008 or 1.3 percent per year. Average vehicle delay is in seconds. LOS pertains to intersection as a whole.

3.16.2 Applicable Laws, Regulations, Plans, and Standards

Construction, operation, maintenance, and decommissioning of the Modified Project or alternatives could affect access and traffic flow patterns on public streets and highways. Therefore, it would be necessary for the Grant Holder or its designee to obtain encroachment permits or similar authorization from the public agencies responsible for the affected roadways, such as Caltrans, Riverside County, or other affected agencies. Laws, regulations, plans, and standards governing transportation and travel management are described below.

3.16.2.1 Federal

49 CFR Subtitle B, Parts 171-173, 177-178, 350-359, 397.9, and Appendices A through G address safety considerations for the transport of goods, materials, and substances and governs the transportation of hazardous materials, including types of materials and marking of the transportation vehicles.

3.16.2.2 State

Caltrans manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting and regulation of the use of state roadways. Roads that are likely to be used as access routes by construction workers and construction vehicles to the project site include Interstate 10.

Caltrans' construction practices require temporary traffic control planning "during any time the normal function of a roadway is suspended" (Caltrans, 2012). Furthermore, Caltrans requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance.

3.16.2.3 Local

Riverside County General Plan

The Riverside County General Plan contains goals, policies and implementation measures that would be relevant to the Modified Project. The Circulation Element of the General Plan includes strategies and principles as they aim to enhance compatibility between land use, infrastructure, and transportation modes (Riverside County, 2008). Relevant policies to the Modified Project and alternatives are discussed below.

> ***C 2.1*:** Maintain the following countywide target Level of Service: LOS "C" along all County maintained roads and conventional state highways.
>
> ***C 2.4*:** The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service standards.
>
> ***C 3.8*:** Restrict heavy duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.
>
> ***C 3.33*:** Assure all-weather, paved access to all developing areas.

Riverside County Code

Riverside County Code Sections 10.08.010 to 10.08.180 establish requirements and permits for oversize and overweight vehicles (Riverside County, 2011).

Riverside County Congestion Management Program

Riverside County's Congestion Management Plan (CMP) specifies a system of highways and roadways for which traffic level of service (LOS) standards are established, specifically that all CMP roadways operate at a LOS E or better. All state highways and principal arterials are CMP roadways. I-10 and SR 177 are the only CMP roadways in the Modified Project area.

City of Blythe General Plan

The Circulation Element of the City of Blythe General Plan (City of Blythe, 2007) provides a blueprint for growth within the city, and sets the guiding policies and implementation policies that apply to the Modified Project area. The following initiatives from the General Plan are relevant to the Modified Project:

> ***Policy 11*:** Strive to maintain traffic LOS B on residential streets and LOS C or better on arterial and collector streets, at all intersections, and on principal arterials in the CMP during peak hours.

***Policy 23*:** Provide adequate circulation and off-street parking and loading facilities for trucks and facilitate intermodal goods delivery.

City of Blythe Municipal Code

The City of Blythe Municipal Code Section 19.1 establishes requirements and permits for moving heavy equipment and loads on city streets (City of Blythe, 2011).

3.16.3 Analytical Methodology

Section 4.16.1 the 2010 PA/FEIS (Appendix A, p. 4.16-1) describes the impact assessment methodology relied upon to analyze the transportation impacts of the Approved Project as a combination of approaches – one based on level of service (LOS) to determination the congestion level on a particular roadway or intersection in terms of *speed*, *travel time*, and *delay*; the other contained in the Highway Capacity Manual 2000 to determine potential impacts to intersections from operation of the Approved Project. This analysis of the Modified Project and alternatives tiers to and relies on those same methodologies.

3.16.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to transportation and travel management:

TRANS-1, Parking and Staging, requires the Grant Holder to develop and implement a parking and staging plan for all phases of project construction prior to start of construction.

TRANS-2, Traffic Control Plan, requires the Grant Holder to prepare and implement a Traffic Control Plan (TCP), and to consult with Riverside County and Caltrans. It also outlines procedures for TCP review and implementation.

TRANS-3, Limitations on Vehicle Size and Weight, requires the Gant Holder or its contractor to comply with limitations imposed by Caltrans and other relevant jurisdictions on vehicle sizes and weights, and to obtain necessary transportation permits from Caltrans and all relevant jurisdictions for use of roadways.

TRANS-4, Encroachment into Public Rights of Way, requires the Grant Holder or its contractor to comply with Caltrans' and other relevant jurisdictions' limitations for encroachment into public rights-of-way and to obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

TRANS-5, Restoration of All Public Roads, Easements, and Rights-of-Way, specifies that the Grant Holder shall consult with the County of Riverside and Caltrans District 8 and notify them of the proposed schedule for project construction. It also requires that all public roads, easements, and rights-of-way be restored to original or near-original pre-construction condition, as directed by the CPM at any time to assure safe ingress and egress.

TRANS-6, Securing Permits/Licenses to Transport Hazardous Materials, requires the Grant Holder to ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

TRANS-8 requires the Grant Holder to prepare an Avigation Easement in accordance with Appendix D of the California Airport Land Use Planning Handbook and have it signed by the BLM prior to the start of operation of any phase of the project.

TRANS-10 requires the Grant Holder to document, investigate, evaluate, and attempt to resolve all project-related glare complaints throughout the construction and operation of the project, and outlines procedures for doing so.

TRANS-11 is specific to the approved generation tie line and is not considered further in this analysis.

TRANS-12 requires the Grant Holder to use textured glass or anti-reflective coating on all solar panels.

TRANS-13 requires the Grant Holder to construct all exposed PV panel support structures with matte or non-reflective surfaces.

3.16.5 Environmental Consequences

3.16.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Construction and Decommissioning

Construction of the Modified Project would be completed over an approximately 48-month period beginning in 2014. The construction workforce would peak during months 19 through 22 at approximately 500 workers per day and average approximately 340 workers over the course of construction. The worst-case scenario, where all workers commute in automobiles with only one occupant per vehicle, yields a peak trip generation of approximately 500 inbound trips during the morning peak period and another 500 outbound trips during the evening peak hour. In the worst-case scenario, one-way worker trips would peak at 1,000 trips per day and an average of 680 one-way trips per day. It is anticipated that construction also would generate an average of approximately 15 to 20 one-way truck trips per day with a peak of approximately 50 to 75 truck trips per day. It further is anticipated that the peak time for truck travel would occur during the construction of the operation and maintenance facility and would not coincide with the peak on-site worker commute timeframe (month 19 in late 2015).

To accommodate the worst-case scenario, a temporary parking area of approximately 4 acres would be required for construction personnel parking (assuming 350 square feet per vehicle) with additional area required for the staging and laydown of equipment, materials, and supplies. The Modified Project would include on-site laydown and parking areas during construction. Those areas would be relocated around the site as construction progresses. Safety and efficiency concerns require on-site parking and laydown areas. That is, a traffic hazard could occur if workers were to park on public roadways or if public roadways were used for the staging and laydown of equipment, materials, and supplies. Such a hazard could have an adverse impact on the LOS on I-10, as well as on the safety of the workers and drivers.

The construction workforce would be drawn from the surrounding local and regional area, including a small number from the greater Los Angeles Basin. Modified Project construction traffic from the Los Angeles, Palm Springs, and Indio areas is expected to follow I-10 east to the site. Workers traveling from Blythe and the Arizona towns of Quartzsite, Ehrenberg, and Cibola would follow I-10 west to the site.

A large portion of the construction workforce is expected to come from, or at least be temporarily housed in, the Blythe and Indio areas (including Coachella, Thermal, and Mecca). These workers would also approach the site following I-10 from the west. Drivers approaching from Blythe itself would generally follow I-10 westerly to Mesa Drive where they would exit to the north and follow Black Rock Road west to the site. However, some workers are likely to follow Hobsonway west directly to Black Rock Road.

Traffic from the Brawley/El Centro area is expected to follow State Route 78 north to I-10 and I-10 west to Mesa Drive. Traffic from the Indio/Palm Springs area and points west would follow I-10 east to Mesa Drive and the site.

See the following tables, which provide information about traffic volumes for roads and intersections used to access the site:

1. Table 3.16-1, Existing (2012) Peak Hour Roadway Traffic Volumes and Levels of Service (see Section 3.16.1, above)
2. Table 3.16-2, Existing (2012) Peak Hour Intersection Levels of Service Without Modified Project, (see Section 3.16.1, above)
3. Table 3.16-3, 2015 Peak Hour Roadway Traffic Volumes, Design Capacities, and Levels of Service with Modified Project
4. Table 3.16-4, 2015 Peak Hour Intersection Levels of Service with Modified Project

As indicated in Table 3.16-3, I-10 east and west of the site would operate at LOS A during peak hour construction conditions, similar to existing (2012) conditions shown in Table 3.16-1. As indicated in Table 3.16-4, intersections would operate at LOS B or better; the addition of Modified Project-related trips would result in a change from LOS A to LOS B at the Black Rock Road/Mesa Drive/Hobsonway intersection compared to existing (2012) conditions shown in Table 3.16-2. DF TRANS-2 requires the implementation of a traffic control plan that would include a work schedule and end-of-shift departure plan designed to ensure that stacking does not occur on intersections necessary to enter and exit the project site, reducing this effect on local intersections.

TABLE 3.16-3
2015 PEAK HOUR ROADWAY TRAFFIC VOLUMES, DESIGN CAPACITIES, AND LEVELS OF SERVICE WITH MODIFIED PROJECT

Roadway/Segment	Travel Lanes	Volume	Capacity	LOS
I-10 West of BSPP Site	4	3,460	8,000	A
I-10 East of BSPP Site	4	3,310	8,000	A

NOTES: Baseline information from Caltrans 2012 data. Year 2012 traffic volumes expanded to Year 2015 at historical rates from year 2004 to 2008 (1.3 percent per year). Capacity represents approximate two-way capacity in vehicles per hour.

TABLE 3.16-4
2015 PEAK HOUR INTERSECTION
LEVELS OF SERVICE WITH MODIFIED PROJECT

	AM Peak Hour		PM Peak Hour	
Intersection	**Delay**	**LOS**	**Delay**	**LOS**
I-10 Westbound Ramps/Mesa Drive	5.5	A	0.7	A
I-10 Eastbound Ramps/Mesa Drive	9.1	A	7.4	A
Black Rock Road/Mesa Drive/Hobsonway	11.7	B	13.5	B

NOTES: Existing traffic volumes (see Table 3.16-2) expanded to Year 2015 at historical rates from years 2004 through 2008 or 1.3 percent per year. LOS pertains to intersection as a whole.

In addition, some equipment that exceeds roadway load or size limits (e.g., main transformers) would need to be transported to the site via I-10 during construction. The equipment would be transported using multi-axle trucks. To transport this equipment, the Grant Holder must obtain special ministerial permits from Caltrans to move oversized or overweight materials. In addition, the Grant Holder must ensure proper routes are followed; proper time is scheduled for the delivery; and proper escorts, including advanced warning and trailing vehicles as well as law enforcement control are available, if necessary. These roadways could be damaged due to construction activities related to the Modified Project. DF TRANS-5 would require the Grant Holder to restore all public roads, easements, and rights-of-way to pre-construction conditions if damaged.

The Modified Project would include a temporary parking area of approximately 4 acres for construction workers, based on the assumption of 350 square feet per vehicle. The parking area would accompany 500 vehicles and would be relocated around the site as construction progresses.

An additional area would be required for staging and laydown of equipment, materials, and supplies. That area would also be relocated around the site as construction progresses.

Because the proposed construction parking area is on-site, the construction phase of the Modified Project would not result in any parking spill-over to sensitive areas and would not create any adverse impacts.

Trip generation during decommissioning likely would be similar to the trips generated during construction, depending on the duration and extent of decommissioning, including dismantling of facilities and/or site remediation.

Operation and Maintenance

As indicated in Table 3.16-5 and Table 3.16-6, surrounding roadways and intersections are projected to operate well-below capacity when the Modified Project is operational by mid-2018. Consequently, the addition of 20 workers arriving at, and departing from, the plant (assumed during the peak traffic hours) would not alter existing or future roadway operating characteristics (LOS). Because these workers would park on-site, the operational phase of the Modified Project would not result in any parking spill-over to sensitive areas and would not create any adverse impacts.

TABLE 3.16-5
2018 PEAK HOUR ROADWAY TRAFFIC VOLUMES, DESIGN CAPACITIES, AND LEVELS OF SERVICE WITH MODIFIED PROJECT

Roadway Segment	Volume	Capacity	LOS
I-10 West of BSPP Site	3,100	8,000	A
I-10 East of BSPP Site	2,990	8,000	A

NOTES: Year 2012 traffic volumes expanded to Year 2018 (Modified Project completion) at historical rates from years 2004 to 2008 or 1.3 per year. Capacity is approximately two-way capacity in vehicles per hour.

TABLE 3.16-6
2018 PEAK HOUR INTERSECTIONS LEVELS OF SERVICE WITH MODIFIED PROJECT

	AM Peak Hour		PM Peak Hour	
Intersection	Delay	LOS	Delay	LOS
I-10 Westbound Ramps/Mesa Drive	2.1	A	1.7	A
I-10 Eastbound Ramps/Mesa Drive	4.0	A	4.8	A
Black Rock Road/Mesa Drive/Hobsonway	2.9	A	3.2	A

NOTES: Existing traffic volumes (see Table 3.16-2) expanded to Year 2018 at historical rates from years 2004 through 2008 or 1.3 percent per year. Average vehicle delay is in seconds for the overall intersection.

In addition, it is anticipated that Modified Project operation and maintenance would require approximately 12 or fewer truck trips per day for the delivery of materials and supplies as well as for off-site shipment of wastes. Truck travel as well as other non-employee site visits would be very small and typically would occur during non-peak periods.

3.16.5.2 Direct and Indirect Effects of Alternative 2 (Proposed Modification Denied)

Construction and Decommissioning

Under Alternative 2, construction of the Approved Project's technology on a smaller parcel of land would be completed over an approximately 45-month period beginning in mid-2014. The construction workforce would peak during months 19 through 22 at approximately 600 workers per day and average approximately 360 workers over the course of construction. Construction of the transmission line is expected to require a limited crew with fewer than 25 workers during peak periods. However, the transmission line construction schedule would not coincide with the peak of plant site construction employment.

The worst-case scenario, where all workers commute in automobiles with only one occupant per vehicle, yields a peak trip generation of approximately 600 inbound trips during the morning peak period and another 600 outbound trips during the evening peak hour. In the worst-case scenario, one-way worker trips would peak at 1,200 trips per day and an average of 720 one-way trips per day. Construction would also generate an average of approximately 15 to 20 one-way truck trips

per day with a peak of approximately 50 to 75 truck trips per day. The peak time for truck travel would occur during the construction of the foundation for the plant site and would not coincide with the peak on-site worker commute timeframe (month 19 in late 2015).

To accommodate the worst-case scenario, a temporary parking area of approximately 5 acres would be required for construction personnel parking (assuming 350 square feet per vehicle) with additional area required for the staging and laydown of equipment, materials, and supplies. Alternative 2 would include on-site laydown and parking areas during construction. Those areas would be relocated around the site as construction progresses. Safety and efficiency concerns require on-site parking and laydown areas. That is, a traffic hazard could occur if workers were to park on public roadways or if public roadways were used for the staging and laydown of equipment, materials, and supplies. Such a hazard could have an adverse impact on the LOS on I-10, as well as on the safety of the workers and drivers.

The construction workforce would be drawn from the surrounding local and regional area, including a small number from the greater Los Angeles Basin. Alternative 2 construction traffic from the Los Angeles, Palm Springs, and Indio areas is expected to follow I-10 east to the site. Workers traveling from Blythe and the Arizona towns of Quartzsite, Ehrenberg, and Cibola would follow I-10 west to the site.

A large portion of the construction workforce is expected to come from, or at least be temporarily housed in the Blythe and Indio areas (including Coachella, Thermal, and Mecca). These workers also would approach the site following I-10 from the west. Drivers approaching from Blythe itself would generally follow I-10 westerly to Mesa Drive where they would exit to the north and follow Black Rock Road west to the site. However, some workers are likely to follow Hobsonway west directly to Black Rock Road.

Traffic from the Brawley/El Centro area is expected to follow State Route 78 north to I-10 and I-10 west to Mesa Drive. Traffic from the Indio/Palm Springs area and points west would follow I-10 east to Mesa Drive and the site.

See the following tables for information about traffic volumes for roads and intersections used to access the site:

1. Table 3.16-1, Existing (2012) Peak Hour Roadway Traffic Volumes and Levels of Service (see Section 3.16.1, above)
2. Table 3.16-2, Existing (2012) Peak Hour Intersection Levels of Service Without Modified Project, (see Section 3.16.1, above)
3. Table 3.16-7, 2015 Peak Hour Roadway Traffic Volumes, Design Capacities, and Levels of Service With Alternative 2
4. Table 3.16-8, 2015 Peak Hour Intersection Levels of Service With Alternative 2

TABLE 3.16-7
2015 PEAK HOUR ROADWAY TRAFFIC VOLUMES, DESIGN CAPACITIES, AND LEVELS OF SERVICE WITH ALTERNATIVE 2

Roadway/Segment	Travel Lanes	Volume	Capacity	LOS
I-10 West of BSPP Site	4	3,560	8,000	A
I-10 East of BSPP Site	4	3,400	8,000	A

NOTES: Baseline information from Caltrans 2012 data. Year 2012 traffic volumes expanded to Year 2015 at historical rates from year 2004 to 2008 (1.3 percent per year). Capacity represents approximate two-way capacity in vehicles per hour.

TABLE 3.16-8
2015 PEAK HOUR INTERSECTION LEVELS OF SERVICE WITH ALTERNATIVE 2

	AM Peak Hour		PM Peak Hour	
Intersection	Delay	LOS	Delay	LOS
I-10 Westbound Ramps/Mesa Drive	6.5	A	0.6	A
I-10 Eastbound Ramps/Mesa Drive	9.9	A	7.9	A
Black Rock Road/Mesa Drive/Hobsonway	19.1	C	20.5	C

NOTES: Existing traffic volumes (see Table 3.16-10) expanded to Year 2015 at historical rates from years 2004 through 2008 or 1.3 percent per year. LOS pertains to intersection as a whole.

As indicated in Table 3.16-7, I-10 east and west of the site would operate at LOS A during peak hour construction conditions, similar to existing (2012) conditions shown in Table 3.16-1. As indicated in Table 3.16-8, intersections would operate at LOS C or better; the addition of Alternative 2-related trips would result in a change from LOS A to LOS C at the Black Rock Road/Mesa Drive/Hobsonway intersection compared to existing (2012) conditions shown in Table 3.16-2. The traffic control plan required by DF TRANS-2 would reduce this effect.

In addition, some equipment that exceeds roadway load or size limits (e.g., the steam turbine generator and main transformers) would need to be transported to the site via I-10 during construction. The equipment would be transported using multi-axle trucks. To transport this equipment, the Grant Holder must obtain special ministerial permits from Caltrans to move oversized or overweight materials. In addition, the Grant Holder must ensure proper routes are followed; proper time is scheduled for the delivery; and proper escorts, including advanced warning and trailing vehicles as well as law enforcement control are available, if necessary. These roadways could be damaged due to Alternative 2-related construction activities. DF TRANS-5 would require the Grant Holder to restore all public roads, easements, and rights-of-way to pre-construction conditions if damaged.

Alternative 2 would include a temporary parking area of approximately 5 acres for construction workers, based on the assumption of 350 square feet per vehicle. The parking area would accompany 600 vehicles and would be relocated around the site as construction progresses.

An additional area would be required for staging and laydown of equipment, materials, and supplies. That area would also be relocated around the site as construction progresses.

Because the proposed construction parking area is on-site, the construction phase of Alternative 2 would not result in any parking spill-over to sensitive areas and would not create any adverse impacts.

Trip generation during decommissioning likely would be similar to the trips generated during construction, depending on the duration and extent of decommissioning, including dismantling of facilities and/or site remediation.

Operation and Maintenance

As indicated in Table 3.16-9 and Table 3.16-10, surrounding roadways and intersections are projected to operate well below capacity when Alternative 2 is operational by mid-2018. Consequently, the addition of 132 workers arriving, and departing from, at the plant (assumed during the peak traffic hours) would not alter existing or future roadway operating characteristics (LOS). Because these workers would park on-site, the operational phase of Alternative 2 would not result in any parking spill-over to sensitive areas and would not create any adverse impacts.

TABLE 3.16-9
2018 PEAK HOUR ROADWAY TRAFFIC VOLUMES, DESIGN CAPACITIES, AND LEVELS OF SERVICE WITH ALTERNATIVE 2

Roadway Segment	Volume	Capacity	LOS
I-10 West of BSPP Site	3,210	8,000	A
I-10 East of BSPP Site	3,090	8,000	A

NOTES: Year 2012 traffic volumes expanded to Year 2018 (Modified Project completion) at historical rates from years 2004 to 2008 or 1.3 per year. Capacity is approximately two-way capacity in vehicles per hour.

TABLE 3.16-10
2018 PEAK HOUR INTERSECTIONS LEVELS OF SERVICE WITH ALTERNATIVE 2

	AM Peak Hour		PM Peak Hour	
Intersection	Delay	LOS	Delay	LOS
I-10 Westbound Ramps/Mesa Drive	3.9	A	0.9	A
I-10 Eastbound Ramps/Mesa Drive	7.2	A	6.4	A
Black Rock Road/Mesa Drive/Hobsonway	6.8	A	7.3	A

NOTES: Existing traffic volumes (see Table 3.16-2) expanded to Year 2018 at historical rates from years 2004 through 2008 or 1.3 percent per year. Average vehicle delay is in seconds for the overall intersection.

In addition, Alternative 2 operation and maintenance would require approximately 12 truck trips per day for the delivery of materials and supplies as well as for off-site shipment of wastes. Truck travel as well as other non-employee site visits would be very small and would typically occur during non-peak periods.

Trip generation during decommissioning likely would be similar to the trips generated during construction, depending on the duration and extent of decommissioning, including dismantling of facilities and/or site remediation.

3.16.5.3 Cumulative Effects

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules and/or project operations that could result in a substantial contribution to increased traffic levels throughout the surrounding roadway network. Because the proposed parking area would be on-site, there would be no parking spill-over to sensitive areas and parking would not create any adverse impacts. Therefore, the Modified Project and Alternative 2 would not contribute to a cumulative effect with respect to parking, and this issue is not discussed further.

For the purposes of the cumulative analysis of transportation and travel management impacts, only other projects that make or would make a substantial contribution to traffic on the same roadway segments as Alternative 1 and Alternative 2 (e.g., within the I-10 corridor) are considered. Because the volume of traffic generated would not be particularly large during construction and decommissioning and would be substantially less during operation and maintenance activities, only segments of I-10 in proximity to the project site would experience any appreciable increase in traffic. Therefore, the geographic scope for cumulative impacts consists of the immediate vicinity of the project site where other projects might contribute traffic to the same segments of I-10, i.e., I-10 near Mesa Drive and the Black Rock Road/Mesa Drive/Hobsonway intersection.

The temporal scope for cumulative transportation and travel management impacts includes the construction, operation, maintenance, and decommissioning phases of Alternative 1 and Alternative 2, because each phase would contribute traffic to roadways within the geographic scope.

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1. Past developments near the project area include the Blythe Energy Project II, Blythe Solar Power Generation Station 1, Blythe Airport Solar I Project, and Blythe PV Project. Past projects have been implemented and so would contribute ongoing operational traffic to area roadways during the Modified Project's or Alternative 2's construction, operation, maintenance, and decommissioning phases. The ongoing impacts associated with past projects are accounted for as part of baseline conditions for the Modified Project and Alternative 2, evaluated in Section 3.16.1, above. That evaluation indicates that vehicular circulation would continue to operate acceptably and would not conflict with established standards of performance.

Present and reasonably foreseeable future actions that would generate traffic along the I-10 corridor are listed in Tables 3.1-1 and 3.1-2, and shown on Figure 3.1-1.

Direct and indirect effects of Alternative 1 and Alternative 2 on transportation and travel management are described in Sections 3.16.5.1 and 3.16.5.2. As stated above, based on temporary (construction and decommissioning) and long-term (operation and maintenance) impacts of the

Modified Project or Alternative 2 on traffic conditions, I-10 east and west of the site would operate at LOS A, and local intersections would operate at LOS C or better. Several pieces of equipment that exceed roadway load or size limits would need to be transported to the site via I-10 during construction, and the Grant Holder must obtain special ministerial permits from Caltrans to move oversized or overweight materials, as identified in DF TRANS-3 in Section 3.16.4, above.

Construction

Cumulative impacts would be greatest if the peak construction period of all of the projects shown on Figure 3.1-1 overlapped. Although this worst-case scenario is unlikely, even if it were to occur, it is unlikely that the LOS of the affected freeway segments would degrade to unacceptable service levels of worse than LOS C, which is the allowable limit in the Riverside County General Plan (Riverside County, 2008) because segments of I-10 near the project site currently operate at LOS A, and because traffic generated by projects west of the BSPP site travelling to and from areas west of SR 177 would not travel on segments of I-10 near the project site. Additionally, as stated, traffic generated during any phase of the Modified Project or Alternative 2 would not be substantial enough to degrade freeway LOS to unacceptable conditions.

Cumulative impacts to segments of I-10 have been considered because it is likely that construction vehicle trips from foreseeable future projects and Modified Project or Alternative 2 would have the greatest potential to combine cumulatively on I-10. It is likely that a portion of construction traffic, including worker and haul trucks, for all projects shown on Figure 3.1-1 would traverse the same portion of I-10 as construction-related traffic from the Modified Project or Alternative 2. Although the construction schedules for the majority of foreseeable future projects are generally unknown, it is extremely unlikely that the peak construction traffic would overlap for all projects proposed in the project area. As shown in Table 3.13-12 in Section 3.13, Socio-Economics and Environmental Justice, projects in the cumulative scenario may contribute as many as 3,300 daily workers on average, generating about 6,600 daily one-way vehicle trips on area roadways. Additionally, estimates of average daily truck trips are available for several of the projects in the cumulative scenario, including Desert Sunlight (33 trips; BLM, 2011), McCoy Solar (30 trips; BLM, 2012a), Desert Harvest (46 trips; BLM, 2012b), Eagle Mountain (4 trips; FERC, 2012), and Palen Solar (30 trips; BLM, 2013). With the incremental impact of the Modified Project's 20 average daily one-way truck trips, and similar estimates for other projects whose truck traffic estimates are not available, the total construction period traffic impact could be nearly 7,300 one-way trips per day. However, the effects of increased traffic on area roadways are judged on the basis of trips per hour, not per day. Even if all the construction worker commute traffic occurred during the peak traffic hour (approximately 3,300 inbound to the project sites at the start of the work day, and the same number outbound at the end of the work day), an estimated 30 percent of those trips would not travel on segments of I-10 near the project site (based on the aforementioned location of projects west of the BSPP site, and on expected residential locations of construction workers). For the same reasons, a similar percentage of truck trips generated by the projects in the cumulative scenario would not travel on segments of I-10 near the project site. In addition, truck trips would be spread over the course of the work day. Given the carrying capacity of I-10 at 8,000 vehicles an hour (Table 3.16-1), the roadway would still operate at an acceptable LOS. That is, the up to 2,850 existing peak-hour vehicles

(Table 3.16-1) plus the addition of about 1,750 vehicles from this and other projects in the cumulative scenario would be well within the carrying capacity of the roadway.

However, as described in DF TRANS-2, the Modified Project's worker vehicle and truck trip traffic would be scheduled during off-peak hours and staggered such that not all vehicles would be attempting to access the site at the same time of day. Other projects have or would undergo environmental review under federal and/or state law and would be subject to similar mitigation; therefore, it is reasonable to assume that these trips would not occur within the peak hour. Additionally, as stated above, though all of the projects in the cumulative scenario would use I-10 for construction access, not all traffic generated would use the same portion of I-10 as the Modified Project. Therefore, the LOS of I-10 in the project vicinity could be temporarily degraded, but likely would not be degraded below the acceptable LOS C, and would not experience enough peak hour trips to exceed 8,000 vehicle trips per hour. Additionally, the cumulative effect of these projects' construction traffic would not result in permanent LOS degradation because construction-related trips would be temporary.

Levels of congestion (delay) at on- and off-ramps along I-10 could be adversely affected due to the temporary influx of construction-related traffic; however, even a worst-case scenario (see above) would not exceed the capacity of I-10, which in this area has two lanes in both directions to accommodate the anticipated increase in traffic while maintaining adequate traffic flow along the freeway mainline.

Operation and Maintenance

Because operation and maintenance of the Modified Project or Alternative 2 would generate substantially less traffic than construction or decommissioning activities, and because the construction phase is unlikely to degrade the LOS of I-10 below acceptable levels (as stated above), no adverse cumulative impact is expected occur due to the traffic generated during the operation and maintenance phase.

Decommissioning

The contribution of the Modified Project or Alternative 2 to cumulative traffic conditions during decommissioning and restoration is unknown, as is the number and proximity of projects that will be developed in the area within the next 30 years. For purposes of this analysis, it is assumed that the project-specific contribution to cumulative conditions at that time would be comparable to its contribution during construction, and the traffic control plan required under DF TRANS-2 would address decommissioning related effects to traffic on I-10.

3.16.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to transportation are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. B4-69). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, modifications or proposed modifications to the approved mitigation measures are warranted. Specifically, Condition TRANS-7 is related to potential impacts created

by thermal plumes and Condition TRANS-9 is related to the operation of parabolic troughs. The Modified Project would not create thermal plumes or involve solar troughs because it would not use solar thermal technology. However, they would remain applicable to Alternative 2. Also, as described in Chapter 2 and Section 3.16.4, above, the Grant Holder has proposed to incorporate Mitigation Measures TRANS-1 through TRANS-6, TRANS-8, and TRANS-10 through TRANS-13 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. No additional mitigation measures are recommended.

Because no new or modified mitigation measures are recommended, residual impacts related to transportation and travel management would be the same as those described in Sections 3.16.5.1, 3.16.5.2, and 3.16.5.3.

TABLE 3.16-11
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR TRANSPORTATION AND TRAVEL MANAGEMENT

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
TRANS-7, TRANS-9	Not applicable, deleted.	Applicable; no revisions made.
TRANS-1 through TRANS-6, TRANS-8, and TRANS-10 through TRANS-13	Proposed as Design Features as shown in Table 2-6.All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

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BLM, 2011. Desert Sunlight Solar Farm Project Final EIS and CDCA Plan Amendment Chapter 4, Section 4.13, Social and Economic Impacts, pages 4.13-2 and 4.13-8. [http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/desert_sunlight.Par.56634.File.dat/Desert%20Sunlight%20FEIS%20chapter%204.pdf]

BLM, 2012a. McCoy Solar Energy Project Final EIS and CDCA Plan Amendment Chapter 4, Section 4.15, Social and Economic Impacts, pages 4.15-2 and 4.15-5.

BLM, 2012b. Desert Harvest Solar Project Final EIS and Proposed CDCA Plan Amendment. November. [http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/desert_harvest_solar.Par.60916.File.dat/CHAPTER_2_Desc_of_Proposed_Action_and_Alts.pdf]

BLM, 2013. Palen Solar Electric Generating System Draft Supplemental Environmental Impact Statement, Executive Summary. [http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/palmsprings/Palen_Solar_Power_Project.Par.65068.File.dat/PSEGS%20DSEIS_Volume%201.pdf]

Federal Energy Regulatory Commission (FERC), 2012. Final Environmental Impact Statement for Hydropower License, Eagle Mountain Pumped Storage Hydroelectric Project—FERC Project No. 13123-002 California. January. [http://eaglemountainenergy.net/pdfs/final_eis.pdf]

3.17 Visual Resources

This section describes and evaluates the potential impacts of the Modified Project (Alternative 1) and Alternative 2 to visual resources. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and any residual effects that may remain following the implementation of such measures are identified. The BLM received scoping comments regarding visual resources; specifically, the comments requested that the Draft EIS analyze the potential impacts of the Modified Project with respect to glare and Visual Resource Management (VRM) objectives (see Appendix D).

3.17.1 Environmental Setting

Section 3.19 and Appendix F of the 2010 PA/FEIS (Appendix A, p. 3.19-1 et seq.; p. AF-1 et seq.) describe the approved site's value as a visual resource and, by reference to existing inventories that use the methodology outlined in BLM's VRM Program, the extent and quality of visual resources in the study area, which consists of all land areas from which any element of the Approved Project would be visible, i.e., the viewshed shown in 2010 PA/FEIS Figure 23 (Appendix A, p. AA-29). Section 3.19 of the 2010 PA/FEIS also describes the BLM's VRM Policy, the relevant Visual Resource Inventory (VRI), and the recommendation of the Field Manager of the BLM PSSCFO that the approved solar plant site be managed according to an Interim VRM Class III designation. This interim VRM Class is based on: (1) the proposed project area was assessed as VRI Class III (see Figure 3.17-3), and (2) the Multiple Use Class of the project area is "L" (limited), which allows for consideration of wind or solar electrical generation facilities after NEPA requirements are met. This analysis of the Modified Project and alternatives relies on those discussions except as updated below to describe changes that have occurred since publication of the 2010 PA/FEIS. Landscape context photographs are shown in Figure 3.17-1. A visual sphere of influence (VSOI) was modeled to determine the surface area where the Modified Project may potentially be visible, and is shown on Figure 3.17-2. The VSOI is a delineated surface area on a map or satellite image showing where a straight-line view from the site of the proposed facility tallest onsite structure considering elevations (excluding buildings, structures, and vegetation) to a hypothetical observer standing 6.5 feet above the surface terrain.

3.17.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards governing visual resources are set forth in the 2010 PA/FEIS (see, e.g., Appendix A, p. 1-18 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.17.3 Analytical Methodology

Section 4.18.1 the 2010 PA/FEIS (Appendix A, p. 4.18-1 et seq.) describes the impact assessment methodology relied upon to analyze visual resources impacts of the Approved Project. The same methodology is employed here.

3.17.3.1 Selection of Key Observation Points

Eight KOPs were selected for the Approved Project and are described in Section 4.18.1.2 of the 2010 PA/FEIS (Appendix A, p. 4.18-3 et seq.). Six of the eight KOPs are relevant to the Modified Project. (This analysis does not reconsider the remaining two KOPs, KOP 6 and KOP 7, because they are specific to the transmission lines, which have not changed as result of the Level 3 variance request.) The KOP ID for purposes of the Modified Project, KOP ID from the 2010 PA/FEIS, location, and characteristics of each KOP are summarized in Table 3.17-1. The location of each KOP is shown in Figure 3.17-4.

TABLE 3.17-1
KOP LOCATION AND CHARACTERISTICS

ID	Approved Project ID	Name	View of	Distance Zone/ View Direction	User Type	View Exposure*
KOP 1	(KOP 1)	Midland Long-Term Visitor Area (LTVA)	Solar Arrays, Structures	Background/ South-southwest	Visitors/ Campers	Seasonal use of LTVA by RVs, campers.
KOP 2	(KOP 2)	LTVA Entrance Kiosk	Solar Arrays, Structures	Middleground/ Southwest	Day-use Visitors/ Motorists	Low traffic on Midland Rd.; seasonal use of LTVA by RVs, campers.
KOP 3	(KOP 3)	Mesa Bluffs Golf Community	Solar Arrays, Structures	Middleground/ West	Recreation/ Residential	Facility users may experience view briefly, and some residents may have views of the project area from elevated west-facing windows.
KOP 4	(KOP 4)	Palo Verde Community College	Solar Arrays, Structures	Middleground/ West	Students/ Staff	Students and staff may experience views for moderate periods from elevated west-facing windows.
KOP 5	(KOP 5)	Blythe Airport	Solar Arrays, Structures	Middleground/ north-northwest	General Aviation	On-ground, view would be experienced briefly. In flight, project area would be highly exposed.
KOP 11	(KOP 8)	McCoy Mountains	Solar Arrays, Structures, Transmission Lines	Middleground/ East	Dispersed Recreational Users	Low use by backcountry travelers who would be exposed to the view for brief to moderate periods in topographically-favored areas.

3.17.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs that address potential effects to visual resources:

AQ-SC3, Construction Fugitive Dust Control, requires that the Grant Holder demonstrate compliance with the AQCMP mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in AQ-SC4 from leaving the project site.

AQ-SC4, Dust Plume Response Requirement, requires that the AQCMM implement additional mitigation measures if visible dust plumes occur which may be transported off the project site.

TRANS-10 requires the Grant Holder to document, investigate, evaluate, and attempt to resolve all project-related glare complaints throughout the construction and operation of the project, and outlines procedures for doing so.

TRANS-12 requires the Grant Holder to use textured glass or anti-reflective coating on all solar panels.

TRANS-13 requires the Grant Holder to construct all exposed PV panel support structures with matte or non-reflective surfaces.

3.17.5 Environmental Consequences

3.17.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

During the construction phase, earth-moving activities, construction materials, nighttime lighting, equipment, trucks, and parked vehicles could be visible on the site. Construction would occur over an approximate 48-month-long period. Activities would include vegetation removal, earthwork, structure construction, and equipment installation. These construction activities could result in a high degree of visual contrast within the landscape. The affected viewers could be residents at the Mesa Bluffs Golf Community, visitors of the LTVA, and dispersed recreational users. Construction activities would be conducted in a manner that minimizes (visible) dust emissions. Adverse visual effects associated with generation of airborne dust and nighttime lathing during the construction phase would be reduced with the implementation of DF AQ-SC3 (see Table 2-6) and Mitigation Measures VIS-2 and VIS-3.

The Modified Project proposes to use high-transmission, low-reflectance PV panels with non-reflective coatings to transmit sunlight to solar cells that directly produce direct current electricity. Manufacturer documentation of the reflection from PV high-transmission, low-reflectance glass with non-reflective coatings indicates that PV panel surface glass is much less reflective than standard window glass and can be approximately 5 percent reflective for a normal incidence ray compared to approximately 20 percent for standard glass (SunPower, 2010). PV

support structures are typically constructed with matte or burnished surfaces to reduce bright specular reflections. The extent of glint and glare is dependent on the specific orientation of individual PV panels and the geometrical relationship of the sun, the PV panel, and the observer. Any such glare observed would not be significant given the low reflective nature of currently available PV solar panels. (NextEra Blythe Solar Energy Center, LLC, 2013b)

Some glare is possible from the surface of the PV panels and other Modified Project components (especially metallic components) that reflect light depending on panel orientation, sun angle, viewing angle, viewing distance, and other factors. For example, Sullivan et al. (2012 as cited in BLM, 2013b) observed glare from a slightly elevated viewpoint at a distance of approximately 2 miles from panels and ancillary components at a partially built PV facility in Nevada. Even though the panels to be used would be a uniform black color, from certain angles and times of day, the panels may appear grey or silvery white due to glare (Sullivan et al., 2012 as cited in BLM, 2013b). Figure 3.17-6 illustrates the apparent color changes of the observed PV facility with differing sun angles and viewing geometry.

Decommissioning would remove project-related structures and infrastructure and restore, revegetate, and stabilize soils in disturbed areas. However, until site rehabilitation and vegetative restoration is achieved, adverse visual impacts would be similar to those described in the construction-phase impacts, because large areas would be devoid of desert scrub vegetation.

Visual Contrast Ratings

To analyze the visual contrast in the landscape that would be created by the Modified Project, the proposed Modified Project components are simulated in photographs of the area for each of the KOPs described in Section 3.17.3.1. Figures 3.17-7 through 3.17-12 present both the existing and simulated conditions of each of the six KOPs. Conclusions on the visual contrast of the Modified Project presented below do not take into consideration the nighttime contrast (lighting), which is discussed above. Documentation of the visual contrast ratings (BLM Form 8400-4, Visual Contrast Rating Worksheet) is included in Appendix F.

KOP 1: Midland Long-Term Visitor Area (LTVA)

This KOP represents the view for users of the Midland LTVA campground entrance (Figure 3.17-7). KOP 1 is located approximately 6 miles northeast of the Modified Project. The distance and low angle of view greatly diminish the dominance and scale of the Modified Project in views of the landscape. This is due to perspective foreshortening, which reduces the apparent size of surfaces of areas or objects, when seen obliquely or at low viewing angles.

The Modified Project would create a contrast primarily in line, color, and texture on the gentle slope of the bajada between the more rugged and complex mountains beyond. Views of the project experienced from this KOP could be long. The Modified Project would be visually apparent, but would not dominate the landscape due to distance, atmospheric haze (when present), and vegetation in the foreground.

The Modified Project as viewed from KOP 1 would conform to VRM Class III objectives.

KOP 2: LTVA Entrance Kiosk

This KOP represents the view for motorists and day-use visitors of the Midland LTVA (Figure 3.17-8). KOP 2 is located approximately 4 miles northeast of the Modified Project. The Midland LTVA accommodates visitors who wish to camp for as long as seven consecutive months or for short periods during the season of its operation (which runs from September 15 through April 15). Thus, while the number of users is generally low, they could experience views of the Modified Project for extended periods of time.

The visual contrast created by the Modified Project is largely similar to that described above for KOP 1, except that KOP 2 is located 2 miles closer. The Modified Project would create more contrast in this location than experienced at KOP 1, due to a closer proximity to the Modified Project and broad long-term views that could be experienced from this location. The viewer would be at a slightly inferior position to the Modified Project, which can increase spatial dominance. The Modified Project would be located on a gently sloping bajada at the base of the McCoy Mountains, creating a darkly colored “seam” and visual interruption in the typically smooth transition between the mountain slopes and valley floor. Because the Modified Project would be slightly elevated from this KOP, the existing vegetation would not adequately screen the Modified Project.

The Modified Project as viewed from KOP 2 would not conform to VRM Class III objectives.

KOP 3: Mesa Bluffs Golf Community

This KOP represents the view for users of the Mesa Bluffs Golf Community, which would include users of the golf course in addition to residences with views of the affected area (Figure 3.17-9). KOP 3 is located approximately 4.5 miles northeast of the Modified Project. A description of the community and views is provided in the 2010 PA/FEIS (p. 4.18-10).

The Modified Project would largely be obscured by topography, existing agriculture (structures, buildings, and row crops), and transmission poles and lines. The viewer would be at an inferior position, which can increase spatial dominance, but would be mitigated by existing cultural modifications, vegetation, and topography at this KOP. Views could be longer from this location. The Modified Project would create a moderate to weak contrast in line and color.

The Modified Project as viewed from KOP 3 would conform to VRM Class III objectives.

KOP 4: Palo Verde Community College

This KOP represents the view for students, teachers, and visitors at the Palo Verde Community College (Figure 3.17-10). KOP 4 is located approximately 3.7 miles east of the approved site. Potential viewers at Palo Verde Community College include students and employees. Students could generally be exposed to views for moderate periods of time, while employees could be exposed to views for longer periods of time.

The Modified Project would be largely obscured by cultural modifications, including existing agriculture (structures, buildings, and row crops), and transmission poles and lines. The viewer would be at an inferior position, which can increase spatial dominance, but is mitigated by

existing cultural modifications, vegetation, and topography at this KOP. The Modified Project would create a moderate to weak contrast in line and color due to existing cultural modifications, distance, and atmospheric haze (when present).

The Modified Project as viewed from KOP 4 would conform to VRM Class III objectives.

KOP 5: Blythe Airport

This KOP represents the view for users on the ground at the Blythe Airport (Figure 3.17-11). KOP 5 is located approximately 2.7 miles south of the Modified Project.

The Modified Project would create a moderate to weak contrast in form and color due to existing cultural modifications in the foreground, distance, and atmospheric haze (when present).

The Modified Project as viewed from KOP 5 would conform to VRM Class III objectives.

KOP 11: McCoy Mountains

This KOP represents the view of the Modified Project for dispersed recreation users in the McCoy Mountains (Figure 3.17-12). KOP 11 is located approximately 2.8 miles from the nearest portion of the Modified Project. While the number of viewers who could experience the exact perspective presented in Figure 3.17-12 is low, this KOP is included to represent the appearance of the Modified Project from elevated viewpoints, where the scale and extent of the Modified Project is not so greatly diminished by the low angle of view. Elevated views of the affected area would also be available from the Big Maria and Little Maria Mountains, which can be accessed from several open NECO routes. Because dispersed recreational users in the mountains could experience the views for long periods of time, and value the visual quality of the surroundings, they are considered a user group with a higher sensitivity level.

From this elevated perspective, the scale dominance of the Modified Project begins to become apparent. The contrast in form is weak, because the Modified Project would continue the flat form of the valley floor and would not impair the forms displayed by the surrounding mountains. However, the contrasts in line, color, and texture would be strong. The straight line created by the outer edges of solar panels would contrast sharply with the curvilinear lines imparted by the numerous desert washes emanating from the mountains. The dark color of the solar panels would be in sharp contrast with the brown and tan hues of the valley; and the organized lines of solar panels would be in contrast with the scattered patchworks of vegetation on the valley floor.

The Modified Project would attract the attention of even a casual observer of the landscape from this perspective. The level of change to the landscape would be strong, and the existing character would be significantly altered.

The Modified Project as viewed from KOP 11 would not conform to VRM Class III objectives.

Impacts to special designations are discussed in the 2010 PA/FEIS (p. 4.18-13) and apply to the Modified Project.

3.17.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

As described in Chapter 2, Alternative 2 would be a scaled-down version of the Approved Project using solar thermal parabolic trough technology and would have the same types of impacts as the Approved Project; however, these effects would occur on only 4,433 acres. The analysis conducted in the 2010 PA/FEIS (Appendix A, p. 4.18-1 et seq.) identified and mitigated the direct and indirect effects that would occur under Alternative 2 during construction, operation and maintenance, and decommissioning though the impacts of Alternative 2 would be smaller in scope than those of the Approved Project because they would occur within a smaller area. Alternative 2 would create more visual contrast than the Modified Project due to additional structures associated with parabolic trough technology (e.g. power blocks and cooling towers) and glint and glare. From the perspectives presented in KOPs 1 through 5, the portion of the horizon line occupied by Alternative 2 would not change visually compared to the Modified Project, due to the geometry. For KOP 11, the contrast in line, color, and texture would be strong. The light and reflective color of the solar arrays would be lighter than the Modified Project, but would continue to create a strong contrast against the brown and tan hues of the valley. Thus, the visual contrast for Alternative 2 would not conform with VRM Class III objectives.

3.17.5.3 Cumulative Effects

Impacts resulting from construction, operation, maintenance, and decommissioning of the Modified Project or Alternative 2 could result in a cumulative effect on visual resources when combined with the incremental effects of past, present, or reasonably foreseeable future actions. The geographic scope of the cumulative effects analysis for visual resources consists of the I-10 corridor (where visual impacts could be synergistic), and locations from which a viewer could see the Modified Project or Alternative 2 along with views of other projects (where visual impacts could be additive).[1] The temporal scope includes all phases of the Modified Project or Alternative 2. Potential cumulative effects on visual resources could occur during the construction period (e.g., from cumulative construction disturbances), during the projected lifespan of the Modified Project or Alternative 2 (e.g., project form, line, color, and/or texture contrast with the landscape, including contrasts from glint and glare), or as a result of closure and decommissioning (e.g., until restoration efforts return the landscape to its original condition).

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1. The projects that would likely be visible from the I-10 corridor (for synergistic effects) include the McCoy Solar Energy Project, Blythe Energy Project II, Blythe Mesa Solar I, Palen Solar Electric Generating System, enXco, Chuckwalla Solar I, Mule Mountain Solar, and Desert Quartzite (see Tables 3.1-1 and 3.1-2 and Figure 3.1-1). The locations from which additive visual impacts could occur include all of the KOPs shown in Figure 3.17-4, which may afford views of both the Modified Project/Alternative 2 and the approved McCoy Solar Energy Project and proposed McCoy Soleil Project.

[1] As defined in Section 6.8.3.5 of BLM NEPA Handbook H-1790-1 (BLM, 2008), “additive” means “the effects of the actions add together to make up the cumulative effect” and “synergistic” means “the effects of the actions together is greater than the sum of their individual effects.”.

Existing conditions within the area of cumulative effects analysis reflect a combination of the natural condition and the effects of past actions and are described in Section 3.17.1, above. Direct and indirect effects of the Modified Project and Alternative 2 are analyzed above. Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1.4, Cumulative Scenario. These projects are expected to result in synergistic visual impacts for travelers along I-10, as well as visual impacts to dispersed recreational users in the surrounding areas.

The Modified Project would convert 4,138 acres of undeveloped land, which would represent 11 percent of the total cumulative effect (in area). The Modified Project would introduce an industrial facility characterized by complex geometric forms and lines and industrial surfaces that are dissimilar to the surrounding natural landscape character.

Overall contrasts created by the Modified Project would include:

1. The rectilinear edge that is created by the overall layout of the solar arrays and its contrast with the surrounding random pattern and relatively even vegetation textures of the desert.
2. The dark gray color of the PV panels as contrasted with the sand, light tan, and brown colors of the desert soils and mountain backdrop.
3. The metal framework structures the panels would be mounted on.
4. The north-south alignment of the PV panels that in most cases are viewed at an angle such that they create a linear texture in the solar array areas.
5. The lines created by security fencing and disturbed vegetation. This line would be accentuated by the reflective qualities of galvanized fencing.
6. The form and pattern of the inverter enclosures rising above the PV panels.
7. The line, form, and texture of the water treatment ponds.
8. The texture and lines of the switchyard.
9. The texture and form of the operation and maintenance building.

Alternative 2 would convert 4,433 acres of undeveloped land, which would represent 12 percent of the total cumulative effect (in area). Alternative 2 would create similar direct and indirect impacts as the Modified Project, with the exception that instead of PV technology, Alternative 2 would consist of parabolic mirror troughs, which could produce glint and glare at various times of the day. The direct and indirect effects of Alternative 2 are described in Section 3.17.5.2, above.

PV projects generally have lower visual impacts than the other technologies because of the low profile of the collector arrays and the lower reflectivity of the PV panels compared to the highly reflective mirrors used by the other technologies. However, all utility-scale solar facilities could create strong visual contrasts for nearby viewers (BLM, 2013). The solar panels would be grouped into arrays as described in Chapter 2. It is yet to be determined whether the project would use fixed-tilt ground mount or a single-axis tracking system. Examples of solar PV developments are shown

in Figure 3.17-5, which shows ground-level and elevated views of the Silver State North solar PV facility near Primm, Nevada, along with a close-up view of the panels.

Present and reasonably foreseeable future projects are shown on Figure 3.1-1. Projects presently under construction and in environmental review consist of approximately 14,500 acres of conversion of natural appearing desert lands to energy facilities, changing the character of the landscape.

If all of the future foreseeable energy projects along I-10 in eastern Riverside County included in Table 3.1-2 were to be implemented, they would convert roughly 30,000 acres within the I-10 corridor viewshed as shown on Figure 3.1-1 from an undeveloped desert to more industrialized appearance.

In terms of synergistic effects, the combined effect of large-scale landscape alterations from the projects listed above that would be visible along the length of I-10 could substantially degrade the visual character and the general scenic appeal of the expansive landscape character of the desert. However, in many cases, the apparent scale of the projects from motorists' perspective could be diminished greatly by favorable topographic relationships and distance. An exception to this would be the proposed Palen Solar Electric Generating System, which would construct two solar power towers approximately 750 feet tall. Because the landscape is currently undeveloped and valued by residents and visitors for its isolated and unspoiled conditions, the addition of numerous new large-scale projects would degrade the scenic experience for many travelers along I-10 and other travel routes.

In terms of additive effects, should full build-out of the cumulative projects that would be visible from the KOPs occur (i.e., the Modified Project or Alternative 2, McCoy Solar Energy Project, and McCoy Soleil), there could be a cumulative impact on views experienced by recreational users and motorists on local roadways in the study area, including the viewsheds captured by KOPs 1 through 5 and 11, due to the conversion of a nearly continuous expanse of over 10,500 acres of undeveloped desert land to solar facilities.

Due to their elevated position and access to unencumbered, panoramic views of the valley below, dispersed wilderness users, including recreational users, in the Palen-McCoy, Big Maria Mountains, and Rice wildernesses surrounding the project site could experience both additive and synergistic impacts in the cumulative scenario. The Modified Project and Alternative 2 viewshed is wholly encompassed by the Riverside East Solar Energy Zone (SEZ). While no projects in the cumulative scenario would result in direct visual disturbance to landscapes within designated wilderness areas, due to their elevated positions, solar energy developments would be visible in part or in whole from significant areas of land within designated wilderness.

In summary, the large-scale, closely spaced nature of large solar projects visible from I-10 or the KOPs, would result in a cumulative scenario that would have substantial adverse impacts on the visual values in the visual resources cumulative geographic scope. Commonly employed visual mitigation measures, such as those proposed in Section 3.17.5.4, below, would slightly reduce the cumulative visual impacts, but not to such a degree as to avoid or substantially reduce the impacts to visual value of the region. The cumulative impact would be long-term, adverse, and unavoidable.

3.17.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to visual resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. K-5 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to the approved mitigation measures are warranted. Specifically, if the Modified Project is implemented, BLM-VIS-1 is revised as shown:

> **BLM-VIS-1:** The project owner shall paint visible ~~power blocks~~ converters and other vertical construction shadow gray as shown on the BLM Color Chart. To the extent feasible, the backs of visible solar panels ~~troughs~~ shall also be color treated to minimize color contrasts. ~~The BLM did not intend~~ BLM-VIS-1 ~~to~~ may not be imposed where views of the backs of solar panels ~~troughs~~ could not be visible outside the facility due to fences and other intervening structures or obstructions.

If Alternative 2 is implemented, BLM-VIS-1 is revised as shown:

> **BLM-VIS-1:** The project owner shall paint visible power blocks and other vertical construction shadow gray as shown on the BLM Color Chart. To the extent feasible, the backs of visible solar troughs shall also be color treated to minimize color contrasts. ~~The BLM did not intend~~ BLM-VIS-1 ~~to~~ may not be imposed where views of the backs of solar troughs could not be visible outside the facility due to fences and other intervening structures or obstructions.

Residual impacts of the Approved Project on visual resources would be substantially reduced, but not eliminated, by the Modified Project. The Modified Project, even with the implementation of the mitigation measures identified above, would result in residual impacts from effects of the size and scale of the project. While mitigation measures VIS-1 through VIS-4 and BLM-VIS-1 would be helpful in reducing the level of contrast in form, line, color and texture for individual project features; the ability of these measures to reduce visual impacts decreases as the size and scale of the project increases. Thus, very few of the identified impacts are altogether eliminated through application of the proposed measures; however, the contrast in color and texture would be substantially reduced from several of the KOPs with application of VIS-1 and BLM-VIS-1. Further, the impact of lighting, while not eliminated, also would be reduced substantially by implementation of VIS-3.

Residual impacts of the Approved Project on visual resources would not be substantially reduced by Alternative 2. Alternative 2, even with the implementation of the mitigation measures identified above, would result in residual impacts from effects of the scale of the project. From the perspectives presented in KOPs 1 through 5, the portion of the horizon line occupied by Alternative 2 would not change in any visually apparent way, due to the color and geometric lines and form of the project. For KOP 11, the area occupied by Alternative 2 would be reduced compared to the Approved Project, but the degree of visual contrast in the color, line, and texture created in the landscape would be the same as the Approved Project. While mitigation measures VIS-1 through VIS-4 and BLM-VIS-1 would be helpful in reducing the level of contrast in form, line, color and texture for individual project features; the ability of these measures to reduce visual impacts decreases as the size and scale of the project increases. Thus, very few of the identified impacts are altogether eliminated through application of the proposed measures;

however, the contrast in color and texture would be substantially reduced from several of the KOPs with application of VIS-1 and BLM-VIS-1. Further, the impact of lighting, while not eliminated, also would be reduced substantially by implementation of VIS-3.

TABLE 3.17-2
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR VISUAL RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
BLM-VIS-1	Applicable; revised as shown above for the Modified Project.	Applicable; revised as shown above for Alternative 2.
VIS-1 through VIS-4	Applicable; no revisions made.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

References

BLM, 2010. Record of Decision, Blythe Solar Power Project and Amendment to the California Desert Conservation Area Plan, Riverside County, California.

BLM, 2013. Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands.

NextEra Blythe Solar Energy Center, LLC, 2013a. Blythe Solar Power Project Revised Petition for Amendment. Prepared for the California Energy Commission. April.

NextEra Blythe Solar Energy Center, LLC, 2013b. Plan of Development Supplement, Blythe Solar Power Project.

SunPower, 2010. PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment.

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3.18 Water Resources

This section describes and evaluates potential impacts to water resources for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; evaluates modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD (Appendix B); and identifies any residual effects that may remain following the implementation of such measures.

The BLM received scoping comments regarding water resources. The comments request description of the following topics: Modified Project's water demand; potential impacts on erosion and impacts on and from surface water flows; amount of water needed for the construction and operation of the proposed PV electrical generation facility and where this water would be obtained; availability of groundwater within the basin and annual recharge rates; potential effects of groundwater use on other water users and natural resources, including springs and open water bodies; reasonably foreseeable direct, indirect, and cumulative impacts to groundwater supply within the hydrographic basin, including impacts from other large-scale solar installations that have also been proposed; an analysis of the potential for alternatives to cause adverse impacts to water quality; and whether the Modified Project needs a California State Water Resources Control Board Construction General Permit, and if such a permit is required, what would be the proposed stormwater pollution control and mitigation measures (see Appendix D).

3.18.1 Environmental Setting

Section 3.20 of the 2010 PA/FEIS (Appendix A, p. 3.20-1 et seq.) describes the water resource-related context of the approved site as located in the alluvial-filled basin of the Palo Verde Mesa in eastern Riverside County, California, and within in the northwestern Colorado Desert (which itself is part of the greater Colorado Desert Geomorphic Province of California and Arizona). It describes the relatively flat topography, "low desert" climate and temperature data, rainfall patterns and evapotranspiration rates, and groundwater basin conditions (including estimates of runoff and infiltration in the Palo Verde Mesa Groundwater Basin, a summary of subsurface movement, and description of aquifer characteristics). Groundwater quality and surface water hydrology also are discussed. This analysis of the Modified Project and alternatives relies on those discussions, and updates others to describe changes that have occurred since publication of the 2010 PA/FEIS. For purposes of analyzing impacts of the Modified Project and alternatives to water resources, the study area is a subset of the study area evaluated in the 2010 PA/FEIS due to the reduced solar plant site area within the approved ROW.

3.18.2 Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project tiers to and relies on those summaries.

3.18.3 Analytical Methodology

Section 4.19.1 of the 2010 PA/FEIS (Appendix A, p. 4.19-1) describes the impact assessment methodology relied upon to analyze the Approved Project's impacts to water resources. This section utilizes information and methodology from Section 4.19.1 of the 2010 PA/FEIS only as it applies to the Modified Project and any new information that has changed existing conditions or the project impacts. Technical reports and studies associated with the Modified Project also were reviewed and considered in the preparation of this analysis. The impacts of the Modified Project were analyzed by: 1) referring to and summarizing any applicable impacts assessments from Section 4.19 of the 2010 PA/FEIS including mitigation measures adopted in the ROD (Appendix B), and 2) incorporating any additional or new information available for the Modified Project that would change or update the analysis for the Approved Project.

3.18.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects to water resources:

SOIL&WATER-1, Drainage Erosion and Sedimentation Control Plan, requires the Grant Holder to obtain CPM approval of the Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during project construction and operations, as normally administered by the County of Riverside. It also outlines what information is required in the DESCP.

SOIL&WATER-2 requires the Grant Holder to identify and implement offset measures to mitigate the impact from project pumping and the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin to the Palo Verde Mesa Groundwater Basin. It also requires that activities proposed for mitigation be outlined in a Water Supply Plan, and outlines what information shall be included in the plan.

SOIL&WATER-3, Project Groundwater Wells, Pre-Well Installation, requires the Grant Holder to ensure that the proposed groundwater wells are completed in accordance with all applicable state and local water well construction permits and requirement, and outlines procedures to ensure compliance and approval.

SOIL&WATER-4, Construction and Operation Water Use, requires the Grant Holder to install and maintain metering devices as part of the water supply and distribution system to document project water use, and identifies limits of the proposed project's use of groundwater during construction.

SOIL&WATER-5, Groundwater Level Monitoring, Mitigation, and Reporting Plan, requires the Grant holder to submit a Groundwater Level Monitoring, Mitigation, and

Reporting Plan to the CPM for review and approval in advance of using onsite wells to supply groundwater for construction activities, and outlines what information shall be included in it, as well as what monitoring data is required throughout the duration of the project.

SOIL&WATER-6 requires the Grant Holder to reimburse a private well owner for increased energy costs and includes reimbursement conditions and compensation information.

SOIL&WATER-7, Waste Discharge Requirements, requires the Grant Holder to comply with requirements relating to existing or potential discharges of waste that could affect water quality, as identified in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board.

SOIL&WATER-8, Septic System and Leach Field Requirements, requires the Grant Holder to comply with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (California Code of Regulations Title 24, Part 5) regarding sanitary waste disposal facilities, such as septic systems and leach fields, and outlines criteria for design, reporting, and implementation of a monitoring program.

SOIL&WATER-9, Groundwater Production Reporting, specifies that the project is subject to the requirements of Water Code Sections 4999 et. seq. for reporting of groundwater production in excess of 25 acre feet per year.

SOIL&WATER-10 requires the Grant Holder to prepare both a Provisional Closure Plan and a Final Closure Plan that will meet the requirements of the BLM, and specifies what information shall be included in the two identified plans, including mitigation measures to lessen or avoid project-related impacts.

SOIL&WATER-11, Revised Project Drainage Report and Plans, requires the Grant Holder to provide a revised Drainage Report and specifies what information shall be included in the report.

SOIL&WATER-12, Detailed FLO-2D Analysis, requires the Grant Holder to provide a detailed hydraulic analysis utilizing FLO-2D, requires all information to be documented in a Technical Memorandum, and specifies what information shall be included in the analysis and report.

SOIL&WATER-16, Estimation of Surface Water Impacts, requires the Grant Holder to estimate, and have approved by the CMP, the increase in discharge from surface water to groundwater that affects recharge from the Palo Verde Valley Groundwater Basin to the Palo Verde Mesa Groundwater Basin, and outlines what shall be included in the estimation.

SOIL&WATER-19 identifies several measures for the Grant Holder to reduce potential impacts to solar panels and related facilities caused by large storms, including implementing a Storm Water Damage Monitoring and Response Plan to clean up any damage and address ongoing issues. It also outlines what information shall be included in the plan.

3.18.5 Environmental Consequences

3.18.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Surface Water Hydrology and Water Quality

Construction of the Modified Project would require use of heavy machinery and would involve activities such as grading and installation of roads and facilities including two groundwater wells,[1] which could disturb native soil, thereby increasing the potential for erosion. Installation of the wells could affect water quality through well drilling and development activities. Chemicals associated with construction and oil and fuel from construction equipment, if not properly managed, could be inadvertently released to the ground resulting in surface water or groundwater quality degradation.

On August 2, 2010, the U.S. Army Corps of Engineers (ACOE) determined that the project site does not support water resources meeting the definition of Waters of the U.S. and that a CWA permit would not be required for the Approved Project. Because the footprint of the Modified Project is entirely within the boundary of the Approved Project, there also are no Waters of the U.S. within the footprint of the Modified Project. The Modified Project is not subject to the federal Clean Water Act and therefore not subject to the National Pollutant Discharge Elimination System (NPDES) Construction General Permit requirements. Construction associated with the Modified Project would disturb approximately 4,138 acres within the approved ROW, including 247 acres of State jurisdictional waters (Galati & Blek, 2013). State waters include all waters of the U.S; surface waters that are not waters of the U.S., such as non-jurisdictional wetlands; groundwater; and territorial seas (SWRCB, 2008). The impacts to State waters would be similar to those discussed in Section 4.19.2 of the 2010 PA/FEIS. Installation of proposed facilities, including roads, fencing, and solar arrays, could interfere with and alter existing on-site drainage patterns. A substantial change in drainage patterns could increase on-site and off-site peak discharges, runoff volumes, runoff rates, erosion, and sedimentation. The Grant Holder has proposed to implement DFs SOIL&WATER-1 (DESCP) and SOIL&WATER-3 (Project Groundwater Well, Pre-Well Installation) described in Section 3.18.4 and listed in Table 2-6, to address these potential effects. The DESCP would require the implementation of Best Management Practices (BMPs) during construction and operation; BMPs include stabilization of construction entrance and exits and roadways, installation of a silt dike, and containment areas for materials storage would be implemented prior to, during, and following construction for erosion, sediment, and tracking controls and waste and stormwater management (AECOM, 2013).

Following construction and during operation of the Modified Project, erosion and sedimentation could occur due to increased storm drainage and changes in drainage patterns. Contamination of the flows from sediment and any pollutants from project activities also could occur. As discussed above for the construction phase, the changes in the drainage pattern could increase discharge on- and off-site over the course of project operation. The minimal grading proposed for the Modified Project coupled with erosion control design features, stormwater mitigation measures, and other

[1] Three groundwater wells are proposed for project use. One well already exists on-site.

protective measures (including minimizing disturbance and compaction to the extent feasible) would enable historic levels of runoff off-site to be maintained at the project site and in downstream areas (AECOM, 2013).

A hydrologic evaluation of drainage, erosion, and sedimentation for the Modified Project (AECOM, 2013) was conducted at one point of discharge representative of the expected largest changes to the peak flow rate and total flow volume. The point of discharge for the Modified Project is immediately downstream of the Modified Project site and was considered as the most representative point to determine changes to the hydrology from site development (AECOM, 2013). Table 3.18-1 summarizes the results from the hydrologic evaluation of pre- and post-development stormwater runoff for the fully constructed Modified Project.

TABLE 3.18-1
SUMMARY OF PRE- AND POST-DEVELOPMENT RUNOFF DOWNSTREAM OF PROJECT SITE

	Pre-Development Runoff	Post-Development Runoff	Change
Peak Flow Rate (cubic feet per second (cfs)			
10-year	205.2	223.8	+18.6 (9%)
25-year	471.6	499.1	+27.5 (5.8%)
100-year	1,149.4	1,212.1	+62.7 (5.5%)
Peak Outflow Volume (acre-feet)			
10-year	573.9	615.7	+41.8 (7.3%)
25-year	1,077.8	1,130.6	+52.8 (4.9%)
100-year	2.014.3	2,083.3	+69 (3.4%)

SOURCE: AECOM, 2013

The hydrologic evaluation indicated that post-development flow conditions at and downstream of the Modified Project site would be similar to the pre-development conditions, with some areas showing small increases in flow, and some areas showing small decreases in flow (AECOM, 2013). Changes to flow patterns resulting from development of the site primarily consist of minor rerouting of flow within the Modified Project site. The changes in flow patterns result from development-related changes in interior surface roughness and construction of the access road and fencing (AECOM, 2013). The hydrologic evaluation estimated that the maximum change in surface flow velocity downstream of the Modified Project site would be +/-0.3 feet per second. Changes to maximum flow velocities within the Modified Project site were similar in magnitude to those downstream of the site. The anticipated changes to flow characteristics were considered to be minor; the hydrologic evaluation demonstrated that the Modified Project would not materially impact the drainage conditions associated with the 10-, 25-, or 100-year precipitation events within, or down-slope of the Modified Project site boundary (AECOM, 2013).

At completion of the proposed facility, the grading on the solar fields would generally maintain the existing slopes. Each solar field area would have finish-grade elevation consistent with the average existing elevation at that location. Surface grading would maintain the sheet flow drainage pattern. The Modified Project would not include drainage channels to redirect stormwater around the site.

The natural wash that crosses the site in the southwest corner would include a wash crossing to protect the access road while allowing the wash to flow in its current location (AECOM, 2013).

The portion of the site that would be covered with impervious surfaces (parking lots, etc.) would constitute a fraction of 1 percent of the total surface area of the site. The final site plan would be based on a detailed topographic survey of the site, as well as detailed hydrologic and topographic studies that would be performed as a part of the permitting and engineering design process (AECOM, 2013). As part of the DESCP, the Grant Holder would implement an erosion control plan for the Modified Project that would enable sediment and erosion control through installation of silt fences and fiber rolls and stabilization of entrance and exit ways and roadways. In addition, to ensure that appropriate drainage maps are developed and other details of erosion control measures, resultant flow patterns, and drainage conveyance features (such as small culverts or Arizona crossings) are adequately addressed, the Grant Holder would implement DFs SOIL&WATER-11 (Revised Project Drainage Report and Plans) and SOIL&WATER-12 (Detailed FLO-2D Analysis) (Table 2-6). These measures include a detailed hydraulic analysis and preparation of a drainage map with graphic representation of pre- and post-development conditions and installed drainage conveyance features.

Construction activities associated with the Modified Project would generate sanitary and industrial process wastewater. Sanitary waste from chemical toilets would be transported off-site for disposal. Other wastewater produced during construction (e.g., equipment rinse water) would be collected by the construction contractor in portable tanks and transported off-site for disposal in a manner consistent with applicable regulatory requirements.

The Modified Project would involve storage and use of materials such as cleaning agents and fuel during operation and maintenance. The materials could come in contact with stormwater and/or drain off-site, affecting water quality. The impact would be similar to that discussed in Section 4.19.2 of the 2010 PA/FEIS. As with the Approved Project, the Modified Project would involve the use of BMPs to contain spills and prevent and control water quality impacts. DF SOIL&WATER-7 requires the Grant Holder to comply with requirements relating to existing or potential discharges of waste that could affect water quality (WDRs), and BMPs such as good housekeeping practices for appropriate storage, handling, and usage of chemicals would be implemented throughout the course of the project.

Sanitary waste generated during the Modified Project operation and maintenance phase would be directed into a 22,000-square-foot (0.51-acre) on-site septic system/leach field. Industrial process water from project operation and maintenance would be routed into two 6-acre on-site evaporation ponds. Wastewater discharge from the treatment facility would consist primarily of non-hazardous reverse osmosis reject solution discharged from the facility at a maximum rate of 60 gallons per minute (gpm). Operation of the wastewater treatment system would be required to comply with the waste discharge requirements and the local plumbing code. DF SOIL&WATER-8 requires that the septic system be designed and operated according to the California Plumbing Code. DF SOIL&WATER-7 would also apply to address water quality protection by incorporating WDRs.

Decommissioning of the Modified Project would involve closure of the solar plant facilities and restoring the site to pre-project conditions. The decommissioning activities would cause land disturbance, which may result in soil erosion and increased storm runoff and contamination of natural waters. Similar to the construction phase, the contractor would implement BMPs to prevent erosion and sedimentation, non-stormwater discharges, and contact between stormwater and potentially polluting substances. Additionally, DF SOIL&WATER-10 (Closure and Decommissioning Plan) includes erosion control measures during decommissioning.

Flood Hazards

As discussed above under Surface Hydrology, minor changes to flow patterns within the project site would result from development-related changes in interior surface roughness and construction of the access road and fencing (AECOM, 2013). The Grant Holder has proposed to implement DF SOIL&WATER-1, which requires the preparation and implementation of a DESCP that must demonstrate no increase in off-site flooding potential. Additionally, DF SOIL&WATER-11 requires the preparation and submittal of a revised project drainage report and plans for review and approval prior to project mobilization. With implementation of these measures, any increase in flows as a result of the Modified Project is not anticipated to result in a noticeable increase in surface flooding on- or off-site.

Groundwater Supply

As described in Chapter 2, potable water would be imported to the site by a commercial provider and stored in on-site water tanks for all phases of the Modified Project, and is not included in the analysis of potential impacts to groundwater supply below.

Process water for construction, operation and maintenance, and decommissioning would be obtained from three on-site wells, one of which already exists. The construction phase would require a total of 1,200 acre-feet (AF) of water over the 48 months of construction (an average of 300 acre-feet per year [AFY]) for compaction and dust suppression, sanitary needs, and other uses. An average of 40 acre-feet per year (AFY) of groundwater would be required during project operation and maintenance, for a maximum total operational consumption of 1,200 AF over the 30-year life of the Modified Project. As described in Chapter 2, water consumption during decommissioning would not exceed operational water consumption (40 AFY). Although the Grant Holder has not provided an estimate of the length of the decommissioning period, it is estimated to be approximately 2 years for the purposes of this analysis. Therefore, the estimated total groundwater consumption over all phases of the Modified Project is estimated to be 2,480 AF. This would represent approximately 0.05 percent of the available 5,000,000 AF of water in storage in the Palo Verde Mesa Groundwater Basin as identified in the 2010 PA/FEIS (Appendix A, p. 4.19-20).

According to the National Water Information System (NWIS) database of Water Resources of the United States that is maintained by the USGS (2013), no springs or other surface water sites are located in the project boundary or in the area of the larger Palo Verde Mesa Groundwater Basin.

Groundwater Levels

Groundwater pumping and production necessary to supply the demand of the Modified Project during construction and operation could have an effect on groundwater levels. While the average project water demand represents only a fraction of water in the basin and considering that detrimental effects to neighboring springs and wells are not expected, the Grant Holder nonetheless would implement DFs described in Section 3.18.4, including SOIL&WATER-4, which includes reporting of the proposed water usage, and SOIL&WATER-9 requiring reporting of groundwater production in excess of 25 AFY. The Grant Holder also would implement DF SOIL&WATER-16 (Estimation of Surface Water Impacts), which includes continued assessment of impacts from groundwater pumping.

Process water for all phases of the Modified Project would be obtained from three on-site wells, one of which already exists. Groundwater levels at the project site were reported in 2009 at approximately 253 feet above mean sea level (AECOM, 2010). Monitoring of groundwater levels is needed to understand the hydrogeologic conditions and mitigate impacts, if identified, associated with lowering of groundwater levels from groundwater pumping. The Grant Holder would implement DF SOIL&WATER-5, which includes monitoring and reporting of groundwater levels during project construction and operation and DF SOIL&WATER-6, which would determine any increased energy costs as it relates to any increase in groundwater level reduction as indicated by monitoring under SOIL&WATER-5.

The BLM recognizes disagreement among water resource professionals as to whether hydrologic connectivity exists between the Palo Verde Mesa Groundwater Basin (PVMGB), which underlies the project site, and the Colorado River via the intervening Palo Verde Valley Groundwater Basin (PVVGB) (Godfrey et al., 2013). The PVMGB and PVVGB collectively are referred to as the Palo Verde Groundwater Basin (PVGB). Agricultural development in the area has caused changes in the groundwater flow patterns in local aquifers (USGS, 1988). Irrigation and its associated network of drainage ditches has a significant effect on the saturated thickness of the aquifers and on the direction of groundwater movement through the aquifers (USGS, 1988). In the vicinity of the project site, a boundary between the PVMGB and the PVVGB exists along the toe of the mesa in the form of Palo Verde Valley Irrigation District (PVID) drains (PVID, 2013). Water from the Colorado River, located over 6 miles east of the mesa, does not flow into the PVMGB due to PVID's drains that intercept all river water (in the form of sub-surface flow within the PVVGB) flowing west toward the PVMGB (PVID, 2013). Similarly, in the vicinity of the project, groundwater within the PVMGB either flows east into a PVID drain along the toe of the mesa or into a cone of depression formed by a well (PVID, 2013). PVID drains prevent underflow from the PVVGB into the PVMGB from occurring and no water flows directly from the Colorado River past the network of PVID drains into the PVMGB (PVID, 2013).

As noted in the ROD for the Approved Project, the BLM has not made a formal determination as to whether groundwater pumping to supply water for the Approved Project would result in significant impacts to Colorado River water (Appendix B, pp. 11-12). The BLM has thoroughly reviewed and remains apprised of the regulatory framework regarding the adjudication of the Colorado River, including the Boulder Canyon Project Act, the Consent Decree, and the draft accounting surface methodology proposed as a method to determine impacts to the Colorado

River. The Bureau of Reclamation has not finalized its rule on the accounting surface methodology for the Colorado River; therefore, the BLM has determined that no formal regulation exists that would require the Grant Holder to acquire an allocation at this time. The BLM remains committed to the statement made in the ROD for the Approved Project that, "should a rulemaking ever be finalized on the currently proposed accounting surface, the BLM will work with the [Grant Holder] to ensure that appropriate processes are followed to obtain such an allocation" (Appendix B, p. 12). Further, existing obligations that require groundwater mitigation, modeling, and monitoring would apply equally to the Modified Project should that occur.

3.18.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

The nature of the impacts from Alternative 2 would be similar to those discussed for the Approved Project in Section 4.19.2 of the 2010 PA/FEIS. Alternative 2 would involve use of the solar trough technology as proposed under the Approved Project.

The potential for water resources-related impacts during construction, operation and maintenance, and decommissioning are higher under Alternative 2 when compared to the Modified Project. Alternative 2 would disturb 4,433 acres within the solar plant site, potentially resulting in increased impacts related to erosion and drainage compared to the Modified Project. Assuming that construction water consumption for Alternative 2 would be scaled to 65 percent of the Approved Project consumption, Alternative 2 would consume approximately 2,665 AF (see Appendix A, p. 3.20-33). Similarly, groundwater use for operation and maintenance of Alternative 2 would be approximately 390 AFY for 30 years. Decommissioning also is anticipated to require approximately the same yearly amount as operation and maintenance and last for 2 years, resulting in a total consumption of 15,145 AF over all phases of Alternative 2. The potential for water surface and groundwater quality impacts would be greater under Alternative 2 because it would involve the use of heat transfer fluid (HTF) and land treatment units (LTUs), as described for the Approved Project. Alternative 2 is expected to require five to six 4-acre evaporation ponds, as scaled compared to the Approved Project. Sanitary waste treatment and wastewater management impacts would be greater for Alternative 2 because it would require more workers and would include the cement batch plant as described for the Approved Project. Comparative impact summaries for the Modified Project and Alternative 2 are shown in Table 3.18-3.

3.18.5.3 Cumulative Effects

Implementation of the Modified Project or Alternative 2, in combination with other past, present, and reasonably foreseeable future actions (shown in Tables 3.1-1 and 3.1-2 and Figure 3.1-1), would result in short-term and long-term cumulative effects on water resources related to surface water hydrology and water quality, groundwater supply and levels, and flood hazards. The cumulative water resource impacts are analyzed within the geographic scope of the Palo Verde Watershed and PVMGB. The temporal scope of cumulative water resources impacts includes construction, operation and maintenance, and decommissioning of the Modified Project or Alternative 2.

Surface Water Hydrology and Water Quality

The geographic scope for the analysis of the cumulative impacts related to surface water hydrology, water quality, and flood hazards consists of the Palo Verde Watershed. As described in Section 3.1, relevant past projects for surface hydrology and water quality impacts include the Blythe Solar I and Blythe PV projects. Ongoing impacts of past projects to surface water and hydrology are reflected in the environmental setting described in Section 3.3.1. Current and reasonably foreseeable projects (described in Tables 3.1-1 and 3.1-2 and shown in Figure 3.1-1) include the McCoy Solar Energy Project, Blythe Energy Project II, and Blythe Mesa Solar Project.

The BLM has received applications for development of the McCoy Soleil, Big Maria Vista Solar, and Desert Quartzite projects; however, the preliminary PODs for these projects have not been determined or accepted as complete. If the application for one or more of these projects is completed before a Final EIS is issued for the Modified Project, the Final EIS would consider the potential contribution to cumulative effects to water resources. The incremental effects of these initial proposals are not known at this time; consequently, they can be contemplated in this analysis only at the highest and most general level based on gross estimates and preliminary understandings. This analysis will be refined if and when actual data and other information about these projects becomes known.

The cumulative impacts on the local surface water hydrology and water quality would be related to onsite short-term activities related to project construction, ongoing activities from project operation and maintenance, and short-term decommissioning activities. The existing surface water hydrology and water quality conditions reflect the current natural water bodies onsite and current actions in the watershed. Construction of the present and reasonably foreseeable actions would require grading, installation of structures, and handling of chemicals, all of which would increase the potential for soil erosion and affect water quality. Operation of the present and foreseeable actions also could result in increased stormwater flows and generation of sanitary and/or industrial process wastewater, which, if not managed or controlled, could affect receiving water quality.

The surface hydrology and water quality impacts from the Modified Project would occur from 1) construction activities, which could increase the potential for soil erosion and affect water quality, 2) operational activities, which would result in increase in stormwater runoff and generate wastewater, and 3) use of chemicals during construction and/or operation, which if released to the natural waterways would affect the receiving water quality. Stormwater control and management measures, discharge of the wastewater in compliance with the applicable regulations, and spill prevention and control measures would be implemented to minimize any adverse impacts. Decommissioning of the Modified Project would involve closure of the solar plant facilities and restoring the site conditions as practicable and result in short-term impacts similar to construction impacts.

Compared to the Modified Project, Alternative 2 would disturb 4,433 acres within the solar plant site, potentially resulting in increased impacts related to erosion and drainage. The potential for surface water quality impacts would be greater under Alternative 2 because it would involve the use of HTF and LTUs. Sanitary waste treatment and wastewater management impacts would be greater for Alternative 2 because it would require more workers and would include the cement

batch plant as described for the Approved Project. Development of Alternative 2 also would result in substantially more grading within the solar plant site as well as the installation of major engineered drainage features described in the 2010 PA/FEIS.

The anticipated extent of land disturbance for other projects in the cumulative scenario is estimated in Table 3.18-2. The projects would change the stormwater drainage characteristics of the watershed within the respective project sites and likely downstream of the sites. Thus, the Modified Project along with the past, present, and foreseeable future actions would result in a cumulative surface hydrology and water quality impacts from disturbance of land and resulting erosion and drainage changes. The relative contribution of the individual projects to the cumulative impacts would vary based on the extent of land disturbance shown in Table 3.18-2 within the Palo Verde Watershed.

TABLE 3.18-2
CUMULATIVE EXTENT OF LAND DISTURBANCE CONTRIBUTING TO IMPACTS ON SURFACE HYDROLOGY IN WATERSHED

	Project	Total Land Area (acres)
BSPP Alternatives	Modified Project	4,138
	Alternative 2	4,433
Past Actions	Blythe Solar Power Generating Station I	29.4
	Blythe PV	200
Present Actions	McCoy Solar Energy Project	4,496
	Blythe Energy Project II	76
Foreseeable Future Actions	McCoy Soleil	1,959
	Blythe Mesa Solar I	3,660
Total	With Modified Project	12,490
	With Alternative 2	12,784

Flood Hazards

Within the Palo Verde Watershed, present and reasonably foreseeable projects (see Table 3.18-2) could change both the extent and physical characteristics of the existing flows within the respective project sites as well as downstream, potentially leading to an increase in flooding conditions. However, as discussed above, the implementation of a DESCP that must demonstrate no increase in off-site flooding potential (under Grant Holder-proposed DF SOIL&WATER-1 for the Modified Project, or under Condition SOIL&WATER-1 from the 2010 ROD for Alternative 2), would minimize the potential for the Modified Project or Alternative 2 to contribute to cumulative off-site flooding conditions.

Groundwater

The geographic scope for the analysis of cumulative groundwater-related impacts consists of the PVMGB. The relevant past, present, and reasonably foreseeable future projects for groundwater-

related impacts include the Blythe PV, McCoy Solar Energy, Blythe Energy II, McCoy Soleil, Blythe Mesa Solar I, Desert Quartzite, and Big Maria Vista projects,. See discussion above regarding proposals for which the BLM has received applications that have not yet been completed. Estimates for these projects are based on preliminary understanding, where available.

Existing conditions for groundwater basin balance reflect a combination of the natural conditions and the effects of past actions as described in Section 3.18.1. Groundwater levels at the solar power plant site were reported at approximately 253 feet above mean sea level in 2009 (AECOM, 2010).

The cumulative impacts on groundwater would be directly related to use of local groundwater and the related groundwater pumping for project activities. Table 3.18-3 shows the groundwater use for the projects within the PVMGB. The local groundwater used for the Modified Project would be 2,480 AF over all phases of the project. This would represent 0.05 percent of the available 5,000,000 AF of water in storage in the PVMGB.[2] Total groundwater use for Alternative 2 would be 15,145 AF over all phases, representing about 0.3 percent of the available water storage in the PVGMB. Under DF SOIL&WATER-5, groundwater elevation would be monitored and reported during project construction and operation. Based on findings from DF SOIL&WATER-5, implementation of DF SOIL&WATER-6 would determine if changes in groundwater elevations would increase energy costs. Implementation of these measures would evaluate major changes in groundwater elevation caused by the Modified Project or Alternative 2.

TABLE 3.18-3
CUMULATIVE GROUNDWATER WITHDRAWAL IN PVMGB

	Project	Total Construction Period Groundwater Pumping (AF)	Annual Operation and Maintenance and Decommissioning Period Groundwater Pumping (AFY)
BSPP Alternatives	Modified Project	1,200	40
	Alternative 2	2,665	390
Past Actions	Blythe PV	negligible[a]	negligible[a]
Present Actions	McCoy Solar Energy Project	750[b]	30[b]
	Blythe Energy Project II	120[a]	2,281[c]
Foreseeable Future Actions	McCoy Soleil	1,225[d]	600[d]
	Blythe Mesa Solar I	-- [e]	10[e]
	Desert Quartzite Project	27[d]	3.8[d]
	Big Maria Vista Project	22[a]	0.22[a]
Totals	With Modified Project		2,965
	With Alternative 2		3,315

[a] See Table 4.19-5 in Appendix A, p. 4.19-18
[b] BLM, 2012
[c] Caithness Blythe II, LLC, 2012
[d] AECOM, 2011
[e] County of Riverside, 2011

[2] Approximately 5,000,000 AF of groundwater storage in PVMGB as explained in the 2010 PA/FEIS (Appendix A, pp. ES-48, 4.19-1).

As also discussed above, agricultural development has caused changes in the groundwater flow patterns in the floodplain alluvial aquifers. Irrigation and its associated network of drainage ditches has had a significant effect on the saturated thickness of the aquifers and on the direction of groundwater movement through the aquifers (USGS, 1988). In general, water from upstream diversions recharges the alluvial aquifers as canal seepage and excess irrigation. Groundwater pumping for the projects in the PVMGB would have cumulative groundwater effects. The contribution of the projects would be in proportion to the groundwater pumping as discussed above and as listed for the relevant projects in Table 3.18-3.

3.18.5.4 Mitigation Measures

Existing, approved mitigation obligations to address authorized impacts to water resources are identified in the ECCMP in Appendix 4 of the 2010 ROD (Appendix B, p. K-8 et seq.). Based on the modifications proposed in the Level 3 variance request relating to the change in solar energy generating technology, proposed modifications to the approved mitigation measures are warranted. Specifically, Mitigation Measures SOIL&WATER 13 through SOIL&WATER-15, which related to drainage channel design, channel erosion protection, and a channel maintenance program, no longer are required because the Modified Project would not construct the major drainage channels included in the Approved Project. However, they would remain relevant to Alternative 2. Also, as described in Chapter 2 and Section 3.18.4, above, the Grant Holder has proposed to incorporate Mitigation Measures SOIL&WATER-1 through SOIL&WATER-12 and SOIL&WATER-16 through SOIL&WATER-19, with revisions as shown in Table 2-6, as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in these measures shall also be submitted/reported to the BLM. No additional mitigation measures are recommended.

Even with the implementation of the mitigation measures identified above, the Modified Project would result in residual impacts to water resources that would be similar in nature to, but substantially less intense than, the residual impacts discussed in 2010 PA/FEIS Section 4.19.5. Residual impacts remaining under Alternative 2 not only would be similar in nature to those described for the Approved Project, but also would be similar in intensity in proportion to the reduced acreage of the solar plant site.

TABLE 3.18-4
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR WATER RESOURCES

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
SOIL&WATER 13 through SOIL&WATER-15	Not applicable; deleted.	Applicable; no revisions made.
SOIL&WATER-1 through SOIL&WATER-12 and SOIL&WATER-16 through SOIL&WATER-19	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

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3.19 Wildland Fire Ecology

This section describes and evaluates issues related to wildland fire ecology for the Modified Project (Alternative 1) and Alternative 2. The environmental and regulatory settings and analytical methodology from the 2010 PA/FEIS for the Approved Project and decisions made in the 2010 ROD are tiered to and relied on to the extent practicable in this Draft EIS and those that apply to the Modified Project are discussed only to the extent that they differ from those described in the 2010 PA/FEIS (Appendix A). This section analyzes the direct, indirect, and cumulative effects of the Modified Project and Alternative 2; modifications (additions, deletions, or other revisions) to the approved mitigation measures provided in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B); and any residual effects that may remain following the implementation of such measures. The BLM received no scoping comments regarding wildland fire ecology (see Appendix D).

As a matter of national land management policy, wildland fire is used to protect, maintain and enhance resources and, as nearly as possible, is allowed to function in its natural ecological role (National Fire and Aviation Executive Board, 2005). The term “wildland fire” includes wildfire, prescribed fire (management ignition, sometimes called “controlled burn”), and wildland fire use (natural ignition) (Id.).

3.19.1 Environmental Setting

Section 3.22 of the 2010 PA/FEIS (Appendix A, p. 3.22-1 et seq.) describes the context of the Approved Project within the NECO Planning Area, the most common causes of fires in the desert, agency responses for fire (including wildfire) management, vegetation-fuel sources on and near the approved site, and desert wildfire suppression methods. This analysis of the Modified Project and alternatives relies on those discussions. For purposes of analyzing impacts of the Modified Project and Alternative 2 on wildland fire ecology, the study area is substantially the same as the study area evaluated in the 2010 PA/FEIS.

3.19.2 Applicable Laws, Regulations, Plans, and Standards

The BLM coordinates its fire management activities with the actions of related federal and state agencies responsible for fire management. The Federal Wildland Fire Policy is a collaborative effort that includes the BLM, NPS, USFWS, and USFS and has resulted in the formulation and standardization of the guiding principles and priorities of wildland fire management on federal lands. See, for example, the Interagency Standards for Fire and Fire Aviation Operations (BLM et al., 2013). This federally approved document addresses fire management, wildfire suppression, fuels management and prescribed fire safety, interagency coordination and cooperation, qualifications and training, objectives, performance standards, and fire management program administration. If the Modified Project or Alternative 2 is developed on the project site, fire management efforts related to the project or the site would occur in the context of the Federal Wildland Fire Policy.

On BLM-administered lands in the California Desert, the BLM implements federal wildland fire management policies and objectives in coordination with state and other federal agencies as part of the California Desert Interagency Fire Management Organization (DOI, 2005). The agency also issues BLM-specific policies, including Order Number CA-060-2012-01, which establishes the policy of the BLM to take all necessary actions to protect human life, the public lands within the CDCA, and the resources and improvements thereon through the prevention of wildfires (BLM, 2013).

Other laws, regulations, plans, and standards are set forth in the 2010 PA/FEIS (Appendix A, p. 1-8 et seq. and p. AB-1 et seq.). This analysis of the Modified Project and alternatives tiers to and relies on those summaries.

3.19.3 Analytical Methodology

Section 4.20.1 the 2010 PA/FEIS (Appendix A, p. 4.17-1) describes the impact assessment methodology relied upon to analyze the Approved Project's impacts to wildland fire ecology. This analysis of the Modified Project and alternatives tiers to and relies on the same methodology.

3.19.4 Proposed Design Features

The Grant Holder has proposed DFs to reduce or avoid potential environmental impacts that could result from the Modified Project (see Table 2-6), including the following DFs to address potential effects related to wildland fire:

WORKER SAFETY-1, which includes requirements for a Project Construction Safety and Health Program, to include a Fire Prevention Plan that shall be submitted to the Riverside County Fire Department (RCFD) for review and comment.

WORKER SAFETY-2, which includes requirements for a Project Operations and Maintenance Safety and Health Program, to include a Fire Prevention Plan that shall be submitted to the RCFD for review and comment.

WORKER SAFETY-9, which requires the Grant Holder to submit to the RCFD all plans and schematic diagrams that show the details of all fire detection and suppression systems and to pay the RCFD for the review of those plans and inspection of the site to ensure compliance with those plans.

BIO-14, Weed Management Plan, requires the implementation of a plan to prevent the introduction of any new weeds and the spread of existing weeds as a result of project site mobilization, construction, operation, and closure.

3.19.5 Environmental Consequences

3.19.5.1 Direct and Indirect Effects of Alternative 1 (Proposed Modification Granted)

Increased vehicle traffic and human presence associated with the construction, operation and maintenance, and decommissioning of the Modified Project has the potential to directly affect the wildfire regime within the area. Potential direct effects of the Modified Project on wildfire include the initiation of wildfire from vehicles (e.g., sparks from catalytic converters, etc.) and other human-associated activities (e.g., embers from cigarettes, etc.). Implementation of the Fire Safety Plans required under DFs WORKER SAFETY-1 and WORKER SAFETY-2 would minimize this risk, and the presence of fire detection and suppression systems on site as required under WORKER SAFETY-9 would reduce the risk of wildfire ignition and increase the ability of on-site staff to suppress fires that may ignite. Additionally, the construction, operation and maintenance, and decommissioning of the Modified Project would indirectly affect the wildfire regime within the area. Indirect effects of the Modified Project on wildfire include increased intensity of fires resulting from increased spread of invasive species, which tend to grow at greater densities than native vegetation. (Invasive species are discussed and analyzed in Section 3.3 of this EIS). Implementation of the Weed Management Plan required under DF BIO-14 would reduce but not avoid the potential to spread invasive species.

3.19.5.2 Direct and Indirect Effects of Alternative 2 (No Action Alternative)

Under this Alternative, the Level 3 variance request would be denied by the BLM and the Grant Holder would be left with the approximately 4,433-acre ROW grant remaining after the partial relinquishment, which, as scaled, would be sufficient to develop approximately 650 MW of the approved 1,000 MW of energy using solar thermal parabolic trough technology. The current ROW approval represents approximately 65 percent of the Approved Project from the 2010 PA/FEIS and 2010 ROD, the remainder of which the Grant Holder relinquished on March 7, 2013. Direct and indirect impacts to wildland fire ecology would be the same as under the Approved Project, but would occur within the smaller (4,433-acre) footprint of the ROW remaining after relinquishment. Any variation in potential impacts to wildland fire ecology associated with the differing technology and infrastructure between the Modified Project and Alternative 2 would be negated by the implementation of DFs, including WORKER SAFETY-1 and WORKER SAFETY-2, which require the implementation of Fire Safety Plans, WORKER SAFETY-9, which requires the presence of fire detection and suppression systems on site, and BIO-14, which requires the implementation of the Weed Management Plan.

3.19.5.3 Cumulative Effects

Direct effects of the Modified Project and Alternative 2 on wildland fire ecology include the potential for initiation of wildfire from vehicles (e.g., sparks from catalytic converters, etc.) and other human-associated activities (e.g., embers from cigarettes, etc.). Indirect effects of the Modified Project and Alternative 2 on wildfire include increased intensity of fires resultant from

increased spread of invasive species, which tend to grow at greater densities than native vegetation. The implementation of DFs, including WORKER SAFETY-1 and WORKER SAFETY-2, which require the development and implementation of Fire Prevention Plans, and WORKER SAFETY-9, which requires the presence of fire detection and suppression systems on site, would minimize the risk of wildfire ignition associated with the Modified Project or Alternative 2. However, some residual risk would remain. Additionally, although the Grant Holder would implement a Weed Management Plan under DF BIO-14 to minimize the spread of invasive species, impacts related to the spread of such species could still occur. These incremental residual impacts of the Modified Project and Alternative 2 could result in a cumulative effect on wildland fire risk in combination with other past, present, or reasonably foreseeable future actions. For the purposes of this analysis, the geographic scope of the cumulative effects analysis for wildland fire ecology consists of eastern Riverside County, which includes about 2,800 square miles (about 1,792,000 acres). Although potential fires would not be constrained by political boundaries, the natural conditions and existing fire response infrastructure are such that it would be reasonable to assume that a fire could be contained within this area. This boundary also is consistent with the California Department of Forestry and Fire Protection's (CAL FIRE) Fire Hazard Severity Zone boundaries (CAL FIRE, 2007, 2010). The temporal scope of cumulative effects on wildlife resources encompasses the duration of all construction, operation and maintenance, decommissioning, and site reclamation and restoration activities; anticipated to be a period of at least 40 years.

Cumulative effects on wildland fire ecology include the effects of the Modified Project or Alternative 2, as well as the effects of other past, present, and reasonably foreseeable future actions, as defined in Section 3.1.3.2. The ongoing impacts associated with past actions within the geographic scopes of the cumulative analyses for wildland fire ecology are reflected in Section 3.19.1 above, as well as Section 3.22 of the 2010 PA/FEIS (Appendix A).

The development of present and reasonably foreseeable future projects, as identified in Tables 3.1-1 and 3.1-2, would result in direct and indirect impacts related to wildfire. The potential effects of present and reasonably foreseeable future projects are similar in nature to those described under the Modified Project and Alternative 2, and are largely associated with potential sources of direct ignition (e.g., sparks from catalytic converters, embers from cigarettes, etc.), and alterations to the vegetation regime (e.g., increased presence on invasive weedy species, etc.) associated with ground-disturbing activities.

A total disturbance of approximately 44,000 acres within eastern Riverside County is projected to occur as a result of present and reasonably foreseeable future projects listed in Tables 3.1-1 and 3.1-2. Implementation of the Modified Project would contribute 4,070 acres (9.3 percent of the projected cumulative impacts) and Alternative 2 would contribute 4,433 acres (10.1 percent of the projected cumulative impacts).

3.19.5.4 Mitigation Measures

Existing, approved mitigation obligations to address impacts to wildland fire ecology are identified in the ECCMP in Appendix 4 of the 2010 ROD for the Approved Project (Appendix B,

p. K-8 et seq.). As described in Chapter 2 and Section 3.19.4, above, the Grant Holder has proposed to incorporate Mitigation Measures WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-9, and BIO-14 as project design features; therefore, these are not considered mitigation measures as understood in a NEPA context. All plan submission and reporting requirements in these DFs shall also be submitted/reported to the BLM.

Despite measures that would be incorporated, the changes in vehicle use accessing the area for construction, operation and maintenance, and decommissioning would increase the likelihood of wildfires associated with the Modified Project and Alternative 2 to a slight, but unknown degree. Therefore, residual impacts to wildland fire would remain.

TABLE 3.19-1
SUMMARY OF EXISTING AND ADDITIONAL MITIGATION FOR WILDLAND FIRE ECOLOGY

Measure(s)	Application to Modified Project	Application to Alternative 2
Existing Mitigation Obligations (as identified in ECCMP in Appendix B)		
WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-9, and BIO-14	Proposed as Design Features as shown in Table 2-6. All plan submission and reporting requirements shall also be submitted/reported to the BLM.	Applicable; no revisions made.
Additional Mitigation Measures		
None recommended.		

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CHAPTER 4
Coordination, Consultation, and Public Involvement

4.1 Interagency Coordination

4.1.1 U.S. Environmental Protection Agency

As described in the 2010 ROD (Appendix B, p. 29), the BLM coordinated with USEPA during the scoping process and comment periods provided for the 2010 PA/FEIS (Appendix A). Coordination has been reinitiated for the Modified Project; USEPA submitted comments in response to the August 30, 2013 Notice of Intent (NOI) to prepare the Draft EIS regarding impacts to air quality and aquatic and biological resources and consistency with regional planning efforts (see Appendix C, p. B-4). USEPA's concerns about air resources are addressed in Section 3.2; impacts to biological resources are addressed in Sections 3.3 and 3.4, and impacts to aquatic resources are addressed in Section 3.18. The BLM will continue to coordinate with USEPA on the Modified Project during this environmental review process.

4.1.2 Department of Defense

As explained in the 2010 PA/FEIS (Appendix A, p. 5-1), the BLM works closely with the Department of Defense (DoD) through the DoD Siting Clearinghouse prior to approval of ROWs for renewable energy, utility, and communication facilities to ensure that these facilities would not interfere with military training routes or special use airspace (DoD and DOI, 2012; DoD, 2013a and 2013b). This coordination is separate from input sought and received from local military installations near the approved site regarding potential hazards to air navigation (see Section 3.7). Although the Clearinghouse has no regulatory authority in permitting energy infrastructure projects, coordination with the Clearinghouse serves the national security interests of the United States by protecting DoD-specific military capabilities such as the capacity to test and evaluate military weapons and sensor systems, monitor the skies for threats, and train personnel (DoD, 2013c). Coordination is in progress for the Modified Project.

4.1.3 U.S. Army Corps of Engineers

On August 2, 2010, the Los Angeles District of the Department of the Army Corps of Engineers (ACOE) rendered a final opinion concluding that there are no Waters of the United States on the approved site (ACOE, 2010; see also Appendix B, p. 29). Because the determination remains valid until August 2, 2015 (ACOE, 2010), consultation with ACOE was not re-initiated for the Modified Project.

4.1.4 California Energy Commission

On August 24, 2009, the prior owner of the Approved Project submitted an Application for Certification (AFC) to the California Energy Commission (CEC), to authorize the project in accordance with state law. The CEC certified the project, i.e., licensed the Approved Project, in its September 15, 2010 Final Decision. During the original proceeding leading up to the CEC's issuance of a license and the BLM's authorization of a ROW grant, BLM and CEC staff worked closely together to review and analyze the project, although the agencies issued separate final documents for compliance with NEPA and CEQA, respectively.

For the Modified Project to be constructed, an amended certification from CEC will be required in addition to a Level 3 variance from the BLM. The Grant Holder filed a Revised Petition For Amendment on April 11, 2013 to modify the existing CEC approval. In October 2013, CEC staff issued Requests for Comments on its analysis of potential CEQA effects of the Modified Project. The CEC issued a final Commission Decision on January 21, 2014 granting the Petition to Amend and a certificate to construct and operate the project (CEC, 2014).

Although the CEC's licensing proceeding and associated environmental review are separate from and independent of the BLM's consideration of the Modified Project under FLPMA and NEPA, BLM staff will continue to work cooperatively with the CEC to review the Modified Project.

4.1.5 California Department of Fish and Wildlife

As described in the 2010 ROD (Appendix B, p. 30), the BLM coordinated with CDFW pursuant to CDFW's jurisdiction over impacts to waters of the State within the approved site (Fish and Game Code §1602). The BLM has reinitiated coordination with CDFW regarding impacts of the Modified Project to waters of the State: CDFW's Inland Deserts Region received a copy of the NOI for the Modified Project and an invitation to participate in the scoping process for this Draft EIS. The BLM will continue to coordinate with CDFW about the Modified Project's impacts to waters of the State.

Also as described in the 2010 ROD (Appendix B, p. 30), CDFW has jurisdiction over species, such as the desert tortoise, which are protected under the California Endangered Species Act. The BLM also will continue to coordinate with CDFW about the Modified Project's impacts to desert tortoise and any other special-status species that could be affected by the Modified Project.

4.1.6 State Water Resources Control Board/Regional Water Quality Control Board

As described in the 2010 ROD (Appendix B, p. 30), the BLM coordinated with the Regional Water Quality Control Board during the environmental review process for the Approved Project. Coordination has been reinitiated for the Modified Project. The Colorado River Basin RWQCB received a copy of the NOI for the Modified Project and an invitation to participate in the scoping process for this Draft EIS. The BLM will continue to coordinate with the RWQCB about the Modified Project.

4.1.7 Native American Heritage Commission

The NAHC, which has special expertise on the subject of Native American historical sites, has jurisdiction to identify sites of special religious and spiritual significance to Native Americans and their heritage (such as archaeological sites and burial grounds), to make recommendations regarding sacred places located on private lands, and to consider the environmental impact on property identified or reasonably identified as a place of special religious significance to Native Americans (Pub. Res. Code §5097.94). Coordination is underway for the Modified Project. The NAHC received a copy of the NOI for the Modified Project and an invitation to participate in the scoping process for this Draft EIS. The BLM will continue to coordinate with the NAHC about the Modified Project.

4.2 Consultation

4.2.1 Endangered Species Act Section 7

Pursuant to Endangered Species Act Section 7 consultation requirements (16 U.S.C. §1531 et seq.), the USFWS issued the Biological Opinion (BO) for the Approved Project that was provided as Appendix 2 to the 2010 ROD (see Appendix B2). The BLM has consulted for the Modified Project consistent with the provisions of the BO (Appendix B2, p. 39) because the BLM retains discretionary authority over the Approved Project and is considering a modification that may cause an effect to listed species that was not considered in the BO.

4.2.2 National Historic Preservation Act Section 106

Pursuant to National Historic Preservation Act Section 106 (16 U.S.C. §470), the BLM coordinated and consulted with potentially affected Indian tribes regarding the Approved Project. It was determined in the 2010 ROD that adverse effects of the Approved Project to historic properties will be resolved through compliance with the terms of the Programmatic Agreement (PA) reached in accordance with 36 C.F.R. Section 800.14(b). The PA was provided as Appendix 3 to the 2010 ROD (see Appendix B3). The PA was amended to consider the Modified Project (See Appendix L to the PA). Section XI of the PA (pp. B3-19 and -20) provides that the agreement may be amended upon the written agreement of its signatories. The signatory, invited signatory, and concurring parties to the PA received a copy of the NOI for the Modified Project and an invitation to participate in the scoping process for this Draft EIS.

4.2.3 Government-to-Government Tribal Consultation

As described in the 2010 ROD (Appendix B, p. 52), tribal consultation occurs on a government-to-government level in accordance with several authorities, including NEPA; the NHPA; the American Indian Religious Freedom Act of 1978 (42 U.S.C. §1996), as amended; Executive Order 13007 (May 24, 1996), concerning Indian Sacred Sites; and Executive Order 13175 (November 6, 2000), concerning Consultation and Coordination with Indian Tribes. For the Approved Project, the BLM conducted government-to-government consultation with a number of tribal governments (see, e.g., Appendix A, p. 5-4). The consultation and discussions revealed

concerns about the importance and sensitivity of cultural resources on and near the approved site, concerns about cumulative effects to cultural resources, and, further, that tribes attach significance to the broader cultural landscape. As a result of the tribal consultation process, many important cultural resources were identified in the project area, and subsequently avoided in the Approved Project.

The BLM invited the Indian tribes who had participated in government-to-government consultation for the Approved Project to consult regarding the Modified Project by letter dated June 26, 2013, which included an invitation to a general information meeting and site visit held on July 23, 2013. The draft PA Amendment was sent to all Consulting Parties to the Agreement, including the tribes, for review on July 19, 2013. These tribes include:

1. Agua Caliente Band of Cahuilla Indians
2. Augustine Band of Cahuilla Indians
3. Cabazon Band of Mission Indians
4. Cahuilla Band of Mission Indians
5. Chemehuevi Indian Tribe
6. Cocopah Indian Tribe
7. Colorado River Indian Tribes
8. Fort Mojave Indian Tribe
9. Fort Yuma Quechan Tribe
10. Morongo Band of Cahuilla Mission Indians
11. Ramona Band of Mission Indians
12. San Manuel Band of Mission Indians
13. Soboba Band of Luiseno Indians
14. Torres-Martinez Desert Cahuilla Indians
15. Twentynine Palms Band of Mission Indians

The BLM also held government-to-government consultation meetings with the Colorado River Indian Tribes and the Quechan Tribe regarding the project.

4.3 Public Involvement

4.3.1 Scoping

The BLM published the NOI to prepare an EIS for the Modified Project in the Federal Register (78 Fed. Reg. 53778) on August 30, 2013. On September 17, 2013 the BLM held a publicly noticed Scoping Meeting in the Community Room at Blythe City Hall, located at 235 N. Broadway in Blythe, California. Written comments were received during the scoping period, which began with the issuance of the NOI and concluded on September 30, 2013. A Scoping Report was prepared, and is included for agency and public review as Appendix D of this Draft EIS.

4.3.2 Commenting on the Draft EIS

The Draft EIS will be circulated for a 45-day comment period. All comments must be postmarked no later than 45 days from the date the EPA publishes the Notice of Availability (NOA) of the Draft EIS in the Federal Register.

Comments on the Draft EIS may be submitted to BLM in writing in any of the following ways:

U.S. Post	Modified Blythe Solar Power Project 1201 Bird Center Drive Palm Springs, CA 92262
E-mail:	CAPSSolarBlythe@blm.gov

One or more public meetings, to be noticed separately, will be held during the comment period for the Draft EIS. Please see BLM's web page at http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Blythe_Solar_Power_Project.html for information about the location, date, and time of any such meeting. All substantive issues raised during the comment period will be considered, and modifications based on these comments may be made in the Final EIS.

Additional hard copies or CD-ROM versions of the Draft EIS may be obtained by contacting the Palm Springs-South Coast Field Office. The document also will be available on the Internet at: http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Blythe_Solar_Power_Project.html.

4.4 Implementation, Monitoring, and Enforcement

4.4.1 Implementation

The BLM will continue to involve and collaborate with the public during the implementation of the Modified Project if it is approved. Opportunities to become involved during implementation and monitoring could include development of partnerships and community-based citizen working groups. Citizens and user groups within the vicinity of the approved site are invited to become actively involved in implementation, monitoring, and enforcement of decisions. The BLM and citizens could collaboratively develop site-specific goals and objectives that mutually benefit public land resources, local communities, and the people who live, work, or play on the public lands.

4.4.2 Monitoring

The BLM would monitor activities throughout the life of the Modified Project to ensure that decisions are implemented in accordance with the approved ROD and ROW grant. Monitoring would be conducted to determine whether decisions, BMPs, and approved mitigation measures are achieving the desired effects. Effectiveness monitoring would provide an empirical data base on impacts of decisions and effectiveness of mitigation. Effectiveness monitoring also would be useful for improving analytical procedures for future impact analyses and for designing or improving mitigation and enhancement measures.

4.4.3 Enforcement and Adaptive Management

Adaptive management has been incorporated into the design features proposed and mitigation measures recommended for the Modified Project. See, for example, DFs GEO-1 and TRANS-10, and Mitigation Measure 3.7-1. Adaptive management is a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are having the desired effect, and, if not, facilitating management changes that will best ensure that those desired effects are met. Procedures include:

1. Determining environmental effects of a project and identifying mitigation needs along with other permitting and regulatory requirements. Analysis should indicate where data are lacking and uncertainty exists with respect to the intended outcomes and the significance of this lack (see 40 CFR §1502.22);

2. Monitoring designed for adaptive management must be able to result in appropriate adjustments in project activities as the project is constructed and planned mitigation is installed;

3. Striving to ensure public input into and understanding of the principles of adaptive management;

4. Maintaining open channels of information to the public and affected regulatory and permitting agencies during the application of adaptive management, including transparency of the monitoring process that precedes adaptive management and the decision-making process that implements it. This involves: (a) identifying indicators of change, (b) assessing monitoring activities for accuracy and usefulness, and (c) making changes in tactics, activities and/or strategies; and

5. Providing post-activity opportunity for public and affected outside agency review of adaptive management practices, including practices that were exceptions to any resource management plans or that had permitting and other regulatory requirements not satisfied by prior coordination.

Adaptive management allows agencies, in their environmental reviews, to establish and analyze mitigation measures that are projected to result in the desired environmental outcomes, and identify those mitigation principles or measures that it would apply in the event the initial mitigation commitments are not implemented or effective.

4.5 List of Preparers

Though individuals have primary responsibility for preparing sections of the EIS, the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. Specialists at the BLM's Field Office, State Office, and Washington Office review the analysis and supply information, as well as provide document preparation oversight. Contributions by individual preparers may be subject to revision by other BLM specialists and by management during internal review.

TABLE 4-1
LIST OF PREPARERS

Name	Position/Qualifications	Primary Responsibility
BLM – Palm Springs-South Coast Field Office		
McMenimen, Frank	Project Manager	Land Use Planning and NEPA Compliance
BLM – California Desert District Office		
Godfrey, Peter	Hydrologist	Water Resources
Ludwig, Noel	Hydrologist	Water Resources
Marsden, Kim	Wildlife Biologist	Wildlife and Vegetation
Thomas, Tiffany	Archaeologist	Cultural Resources, Paleontological Resources
BLM – California State Office		
Anderson, Brandon	Realty Specialist	Lands and Realty
Arteaga, Jane	Outdoor Recreation Planner	Transportation and Travel Management
Meyer-Shields, Elizabeth	Planning and Environmental Coordinator	Planning, NEPA Compliance
Weigand, James	Ecologist	Air Resources, Biological Resources, Hazards and Hazardous Materials, Soil Resources
Environmental Science Associates		
Bray, Madeleine	RPA, M.A., Archaeology	Cultural Resources
Burns, Michael	Program Manager; Certified Engineering Geologist, Professional Geologist	Hazards and Hazardous Materials
Carlson, Allisa	Senior Associate; Professional Landscape Architect, LEED AP	Visual Resources
Devadiga, Asavari	Managing Associate/Environmental Scientist; Ph.D. candidate, Infrastructure Planning; M.S., Environmental Science and Policy; M.S., Environmental Pollution Control Technology; B.S., Microbiology	Water Resources
Fagundes, Matt	Physical Sciences Resource Area Leader; B.S., Environmental Studies	Air Resources, Climate Change, Noise
Gispert, Cristina	Senior Associate; B.S., Environmental Management and Protection	Scoping Report; Lands and Realty (including Multiple Use Classes), Recreation, Special Designations
Gragg, Justin	Technical Associate; M.S. Environmental Science and Management	Mineral Resources, Geology and Soils
Henry, Joseph	Biologist; M.S., Public Health; B.S., Ecology and Systematic Biology	Biological Resources-Vegetation, Biological Resources-Wildlife, Wildland Fire Ecology
Hudson, Pete	PG, CEG; Senior Geologist/Hydrogeologist	Soil Resources, Mineral Resources, Paleontological Resources, Water Resources
Hutchison, Jack	Senior Transportation Engineer, P.E.	Transportation and Travel Management
Kostalas, Alexandra	Senior Associate; M.A., Urban Planning	Deputy Project Manager; Scoping Report; Lands and Realty (including Multiple Use Classes), Recreation, Socioeconomics and Environmental Justice, Special Designations, Visual Resources
Lancelle, Karen	Associate; B.A., Geology	Hazards and Hazardous Materials, Soil Resources, Mineral Resources, Paleontological Resources
McCullough, Wes	GIS Specialist	Mapping and Figures

TABLE 4-1 (Continued)
LIST OF PREPARERS

Name	Position/Qualifications	Primary Responsibility
Environmental Science Associates (cont.)		
Pittman, Brian	CWB, M.S., Environmental Studies; B.A., Biology	Biological Resources-Vegetation, Biological Resources-Wildlife, Wildland Fire Ecology
Rimpo, Tim	Program Manager – Air Quality; M.S., Economics (Natural Resource & Environmental Specialization)	Air Resources, Climate Change, Noise
Scott, Janna	Sr. Managing Associate, J.D.	Project Manager
Stewart, Shannon	Principle Technical Associate; M.S., Planning	Project Director
Strauss, Monica	RPA, Director, Senior Managing Archaeologist, M.A., Archaeology	Cultural Resources
Weiss, Ray	B.A., Economics with a special emphasis in environmental and resource economics	Socioeconomics and Environmental Justice,

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CHAPTER 5
Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per Liter
µg/m^3	micrograms per cubic meter
AAQS	ambient air quality standards
AB 32	California Global Warming Solutions Act of 2006
AC	alternating current
ACEC	Area of Critical Environmental Concern
ACS	American Community Survey
ACOE	U.S. Army Corps of Engineers
AF	acre-feet
AFC	Application for Certification
AFY	acre-feet per year
APE	Area of Potential Effects
AZ	Arizona
BBCS	Bird and Bat Conservation Strategy
BCC	Birds of Conservation Concern
BEA	United States Bureau of Economic Analysis
BGEPA	Bald and Golden Eagle Protection Act
BLM	United States Department of Interior, Bureau of Land Management
BMPs	best management practices
BO	Biological Opinion
BRMIMP	Biological Resources Mitigation, Implementation, and Monitoring Plan
BRMMP	Biological Resources Mitigation and Monitoring Plan
BSPP	Blythe Solar Power Project
BTU/kWh	British thermal units per kilowatt hour
CAA	Clean Air Act
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board

CARIDAP	California Archaeological Resources Identification and Data Acquisition Program
CBC	California Building Code
CCD	Census County Division
CCH	Consortium of California Herbaria
CDC	Centers for Disease Control
CDCA	California Desert Conservation Area
CDCA Plan	California Desert Conservation Area Plan of 1980, as amended
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CDPA	California Desert Protection Act of 1994
CDPH	California Department of Public Health
CDV	canine distemper virus
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CMA	Congestion Management Agency
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CRMMP	Cultural Resources Monitoring and Mitigation Plan
CRR	Cultural Resources Report
CRS	Cultural Resources Specialist
CT	census tract
cy	cubic yards
DAS	data acquisition system
dB	decibel
dBA	A-weighted decibel
DC	direct current

DESCP	Drainage Erosion and Sedimentation Control Plan
DHS	United States Department of Homeland Security
DF	design feature
DoD	United States Department of Defense
DOE	United States Department of Energy
DOF	California Department of Finance
DOI	United States Department of Interior
DPM	diesel particulate matter
DRECP	California Desert Renewable Energy Conservation Plan
DTC/C-AMA	Desert Training Center California-Arizona Maneuver Area
DTCCL	Desert Training Center California-Arizona Maneuver Area Cultural Landscape
EAP	Emergency Action Plan
ECCMP	Environmental and Construction Compliance Monitoring Plan
EDD	California Employment Development Department
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Field
EPAct	Energy Policy Act of 2005
ESA	Environmental Science Associates
FAA	Federal Aviation Administration
FE	Federally listed as endangered
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FR	Federal Register
ft	foot
FT	Federally listed as threatened
FTA	Federal Transit Administration
gal	gallon
g/m^2yr	grams per square meter per year
GDP	gross domestic product
GHG	greenhouse gas
GIS	geographic information system

gpd	gallons per day
gpd/ft	gallons per day per foot
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
GPS	global positioning system
GWP	global warming potential
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HRA	health risk assessment
HTF	Heat Transfer Fluid
I-10	Interstate 10
IM	Instructional Memorandum
kg	kilogram
KOP	key observation point
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
L_{90}	The A-weighted noise level that is exceeded 90 percent of the time during the measurement period.
lbs	pounds
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
LLC	Limited Liability Corporation
LORS	laws, ordinances, regulations, and standards
LOS	level of service
LR2000	Land & Mineral Legacy Rehost 2000 System
LTU	land treatment unit
LTVAs	Long Term Visitor Areas
m	meter
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
mi	mile
MIR	maximally impacted receptor
ml	milliliter

mm	millimeter
MM	Modified Mercalli
mph	miles per hour
MRDS	Mineral Resources Data System
MRZ	Mineral Resource Zone
m/s	meters per second
MSEP	McCoy Solar Energy Project
MW	megawatt
MWh	megawatt-hour
MT	metric tone
MTPs	Master Title Plats
MUC	Multiple-Use Class
NAHC	Native American Heritage Commission
NECO	Northern & Eastern Colorado Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NFWF	National Fish and Wildlife Foundation
NGI	Norwegian Geotechnical Institute
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIS	National Water Information System
O_2	oxygen
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHV	off-highway vehicle
OSHA	United States Occupational Safety and Health Administration
PA	Programmatic Agreement or Plan Amendment
PA/FEIS	Proposed Plan Amendment/Final Environmental Impact Statement
PAR	Property Analysis Record
PCS	power conversion station

PEIS	Programmatic Environmental Impact Statement
PHA	Project Historical Archaeologist
PM	particulate matter
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in diameter
POD	Plan of Development
PPA	Power Purchase Agreement or Project Prehistoric Archaeologist
ppm	parts per million
PRMMP	Paleontologic Resources Monitoring and Mitigation Plan
PSSCFO	Palm Springs-South Coast Field Office
PTA	Petition for Amendment
PTNCL	Prehistoric Trails Network Cultural Landscape
PV	photovoltaic
PVGB	Palo Verde Groundwater Basin
PVID	Palo Verde Valley Irrigation District
PVMGB	Palo Verde Mesa Groundwater Basin
PVVGB	Palo Verde Valley Groundwater Basin
PQAD	Prehistoric Quarries Archaeological District
R	State characterized as rare
RCRA	Resource Conservation and Recovery Act of 1976
REAT	Renewable Energy Action Team
RO	reverse osmosis
ROD	Record of Decision
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act of 1986
SCADA	supervisory control and data acquisition
SCE	Southern California Edison
SCG	Southern California Gas
SDWA	Safe Drinking Water Act
SE	State listed as endangered
SEZ	Solar Energy Zone
SF	Standard form
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SO_X	sulfur oxides
ST	State listed as threatened

SUT	step-up transformers
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	The Climate Registry
TDS	Total Dissolved Solids
TSCA	Toxic Substances Control Act of 1976
UL	Underwriters Laboratory
U.S.	United States
USC	United States Code
USDA	United States Department of Agriculture
USDOT	Unite States Department of Transportation
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
UV	ultraviolet
V	volts
VMT	vehicle miles traveled
VOC	volatile organic compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
VSOI	visual sphere of influence
W	watts
WBO	Western burrowing owl
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
WIU	Wilderness Inventory Unit
W/m^2	watts per square meter
yr	year

CHAPTER 6
Glossary

A

Air Basin: A regional area defined for state air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Ambient Air Quality Standards (AAQS): A combination of air pollutant concentrations, exposure durations, and exposure frequencies that are established as thresholds above which adverse impacts to public health and welfare may be expected. Ambient air quality standards are set on a national level by the U.S. Environmental Protection Agency. Ambient air quality standards are set on a state level by public health or environmental protection agencies as authorized by state law.

Ambient Air: Outdoor air in locations accessible to the general public.

Area of Critical Environmental Concern (ACEC): A designated area on public lands where special management attention is required: (1) to protect and prevent irreparable damage to fish and wildlife; (2) to protect important historic, cultural, or scenic values, or other natural systems or processes; or (3) to protect life and safety from natural hazards.

Area of Potential Effects (APE): The geographic area or areas within which an action may directly or indirectly cause changes in the character or use of historic properties, if such properties exist.

Attainment Area: An area that has air quality as good as or better than a national or state ambient air quality standard. A single geographic area may be an attainment area for one pollutant and a non-attainment area for others.

B

Best Management Practices (BMPs): A practice or combination of practices that are determined to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts.

C

Cancer: A class of diseases characterized by uncontrolled growth of somatic cells. Cancers are typically caused by one of three mechanisms: chemically induced mutations or other changes to

cellular DNA; radiation induced damage to cellular chromosomes; or viral infections that introduce new DNA into cells.

Carbon Monoxide (CO): A colorless, odorless gas that is toxic because it reduces the oxygen-carrying capacity of the blood.

Characteristic: A distinguishing trait, feature, or quality.

Characteristic Landscape: The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Climate: A statistical description of daily, seasonal, or annual weather conditions based on recent or long-term weather data. Climate descriptions typically emphasize average, maximum, and minimum conditions for temperature, precipitation, humidity, wind, cloud cover, and sunlight intensity patterns; statistics on the frequency and intensity of tornado, hurricane, or other severe storm events may also be included.

Contrast: Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast Rating: A method of analyzing the potential visual impacts of proposed management activities.

Criteria Pollutant: An air pollutant for which there is a national ambient air quality standard (carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, inhalable particulate matter, fine particulate matter, or airborne lead particles).

Critical Habitat: Habitat designated by the U.S. Fish and Wildlife Service under Section 4 of the federal Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management of protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

Cultural Resource: A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

D

Day/Night Average Sound Level (Ldn): A 24-hour average noise level rating with a 10 dB penalty factor applied to nighttime noise levels. The Ldn value is very similar to the CNEL value, but does not include any weighting factor for noise during evening hours.

Decibel (dB): A generic term for measurement units based on the logarithm of the ratio between a measured value and a reference value. Decibel scales are most commonly associated with

acoustics (using air pressure fluctuation data); but decibel scales sometimes are used for ground-borne vibrations or various electronic signal measurements.

Desert Pavement: A surface covering of closely packed rock fragments of pebble or cobble size found on desert soils.

Distance Zones: A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middleground, background, and seldom seen.

E

Equivalent Average Sound Pressure Level (Leq): The decibel level of a constant noise source that would have the same total acoustical energy over the same time interval as the actual time-varying noise condition being measured or estimated. Leq values must be associated with an explicit or implicit averaging time in order to have practical meaning.

Electric and Magnetic Field: Invisible areas of energy, often referred to as radiation, that are associated with the use of electrical power and various forms of natural and man-made lighting. EMFs are typically characterized by wavelength or frequency into one of two radioactive categories:

> ***Non-ionizing***: low-level radiation which is generally perceived as harmless to humans
>
> ***Ionizing:*** high-level radiation which has the potential for cellular and DNA damage

Erosion: A natural process whereby soil and highly weathered rock materials are worn away and transported to another area, most commonly by wind or water.

Ethnographic Resources: Resources representing the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Excavation: The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

Expansive Soils: A soil which significantly changes its volume in horizontal and vertical planes with changes in moisture content.

F

Fault (active): A fault that has had surface displacement during Holocene time (last 11,000 years).

Fault (potentially active): A Quaternary-age (last 1.8 million years) fault that lacks evidence of Holocene-age displacement.

Form: The mass or shape of an object or objects which appear unified, such as a vegetative opening in a forest, a cliff formation, or a water tank.

G

Geomorphic Province: Naturally defined geologic regions that display a distinct landscape or landform.

Glare: The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility. See Glint.

Glint: A momentary flash of light resulting from a spatially localized reflection of sunlight.

Greenhouse Gas (GHG): A gaseous compound that absorbs infrared radiation and re-radiates a portion of hat back toward the earth's surface, thus trapping heat and warming the earth's atmosphere.

H

Habitat: A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Hertz (Hz): A standard unit for describing acoustical frequencies measured as the number of air pressure fluctuation cycles per second. For most people, the audible range of acoustical frequencies is from 20 Hz to 20,000 Hz.

Historical Site: A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

Holocene: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

Hydrocarbons: Any organic compound containing only carbon and hydrogen, such as the alkanes, alkenes, alkynes, terpenes, and arenes.

I

Indian Tribe: Any American Indian group in the United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

Invasive Species: An exotic species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13122, 2/3/99).

Isolate: Non-linear, isolated archaeological features without associated artifacts.

K

Key Observation Point (KOP): One or a series of points on a travel route or at a use area or a potential use area, where the view of a management activity would be most revealing.

L

Landscape Character: The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture. These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.

Landscape Features: The land and water form, vegetation, and structures which compose the characteristic landscape.

Landslide: A slope failure that involves downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces.

Leasable Minerals: Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Line: The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Liquefaction: A condition in which a saturated cohesionless soil may lose shear strength because of a sudden increase in pore water pressure caused by an earthquake.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Maintenance Area: An area that currently meets federal ambient air quality standards but which was previously designated as a nonattainment area. Federal agency actions occurring in a maintenance area are still subject to Clean Air Act conformity review requirements.

Memorandum of Understanding (MOU): A written but noncontractual agreement between two or more agencies or other parties to take a certain course of action.

Metropolitan Statistical Areas (MSAs): A geographical region with a relatively high population density at its core and close economic ties throughout the area, delineated for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics.

Mineral Material Disposal: The sale of sand, gravel, decorative rock, or other materials defined in 43 CFR 3600.

Mining Claim: A mining claim is a selected parcel of Federal Land, valuable for a specific mineral deposit or deposits, for which a right of possession has been asserted under the General Mining Law. This right is restricted to the development and extraction of a mineral deposit. The rights granted by a mining claim protect against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. The two types of mining claims are lode and placer. In addition, mill sites and tunnel sites may be located to provide support facilities for lode and placer mining.

Mitigation: Mitigation includes: (a) Avoiding the impacts altogether by not taking an action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e) Compensating for the impact by replacing or providing substitute resources or environments (40 CFR §1508.20).

N

National Pollutant Discharge Elimination System (NPDES): The NPDES permit program has been delegated in California to the State Water Resources Control Board. These sections of the CWA require that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a state certification that the discharge complies with other provisions of the Clean Water Act.

National Register of Historic Places: The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register.

Native American: Indigenous peoples of the western hemisphere.

Nitrogen Dioxide (NO_2): A toxic reddish gas formed by oxidation of nitric oxide. Nitrogen dioxide is a strong respiratory and eye irritant. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere. Nitrogen dioxide is a criteria pollutant in its own right, and is a precursor of ozone, numerous types of photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Non-native Species: See Invasive Species.

Noxious Weed: According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agricultural and commerce of the United States and to the public health.

Nonattainment Area: An area that does not meet a federal or state ambient air quality standard. Federal agency actions occurring in a federal nonattainment area are subject to Clean Air Act conformity review requirements.

O

Off-Highway Vehicle (OHV): Any vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain, deriving motive power from any source other than muscle. OHVs exclude: 1) any non-amphibious registered motorboat; 2), any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; 3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies.

Organic Compounds: Compounds of carbon containing hydrogen and possibly other elements (such as oxygen, sulfur, or nitrogen). Major subgroups of organic compounds include hydrocarbons, alcohols, aldehydes, carboxylic acids, esters, ethers, and ketones. Organic compounds do not include crystalline or amorphous forms of elemental carbon (graphite, diamond, carbon black, etc.), the simple oxides of carbon (carbon monoxide and carbon dioxide), metallic carbides, or metallic carbonates.

Overdraft condition: A condition in which the total volume of water being extracted from the groundwater basin would be greater than the total recharge provided to the basin.

Ozone (O_3): A compound consisting of three oxygen atoms. Ozone is a major constituent of photochemical smog that is formed primarily through chemical reactions in the atmosphere involving reactive organic compounds, nitrogen oxides, and ultraviolet light. Ozone is a toxic chemical that damages various types of plant and animal tissues and which causes chemical oxidation damage to various materials. Ozone is a respiratory irritant, and appears to increase susceptibility to respiratory infections. A natural layer of ozone in the upper atmosphere absorbs high energy ultraviolet radiation, reducing the intensity and spectrum of ultraviolet light that reaches the earth's surface.

P

Paleontological Resources (Fossils): The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are for understanding past environments, environmental change, and the evolution of life.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Paleozoic Era: An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Missippian, Pennsylvanian, and Permian periods.

Particulate Matter: Solid or liquid material having size, shape, and density characteristics that allow the material to remain suspended in the atmosphere for more than a few minutes. Particulate matter can be characterized by chemical characteristics, physical form, or aerodynamic properties. Categories based on aerodynamic properties are commonly described as being size categories, although physical size is not used to define the categories. Many components of suspended particulate matter are respiratory irritants. Some components (such as crystalline or fibrous minerals) are primarily physical irritants. Other components are chemical irritants (such as sulfates, nitrates, and various organic chemicals). Suspended particulate matter also can contain compounds

(such as heavy metals and various organic compounds) that are systemic toxins or necrotic agents. Suspended particulate matter or compounds adsorbed on the surface of particles can also be carcinogenic or mutagenic chemicals. See PM10 and PM2.5.

Peak Ground Acceleration (PGA): A common measure of ground motion during an earthquake. The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place, and is dependent on the distance from the epicenter and the character of the underlying geology (e.g. hard bedrock, soft sediments, or artificial fills).

pH (parts hydrogen): a measure of the acidity or basicity of a water-based solution. Pure water is considered neutral with a pH of 7, while solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are basic or alkaline.

Physiographic Province: An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin (Fenneman 1946; Sahrhaftig 1975).

Pleistocene (Ice Age): An epoch in the Quarternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

Pliocene: The Pliocene Epoch is the period in the geologic timescale that extends from 5.332 million to 2.588 million years before present.

PM10 (inhalable particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 50 microns penetrate to the lower respiratory tract (tracheo-bronchial airways and alveoli in the lungs). In a regulatory context, PM10 is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 9.5 to 10.5 microns and an maximum aerodynamic diameter collection limit less than 50 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 10 microns and less than 50 percent for particles with aerodynamic diameters larger than 10 microns.

PM2.5 (fine particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 6 microns penetrate into the alveoli in the lungs. In a regulatory context, PM2.5 is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 2.0 to 2.5 microns and an maximum aerodynamic diameter collection limit less than 6 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 2.5 microns and less than 50 percent for particles with aerodynamic diameters larger than 2.5 microns.

Power Purchase Agreement (PPA): A contract between two parties, one who generates and intends to sell electricity, and one who is looking to purchase electricity, defining the commercial terms for the sale of electricity between the two parties.

Precursor: A compound or category of pollutant that undergoes chemical reactions in the atmosphere to produce or catalyze the production of another type of air pollutant.

Prehistoric: Refers to the period wherein American Indian cultural activities took place before written records and not yet influenced by contact with nonnative culture(s).

Q

Quaternary Age: The most recent of the three periods of the Cenozoic Era. In the geologic time scale of the International Commission on Stratigraphy, it follows the Tertiary Period, spanning time from approximately 2.6 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene.

R

Record of Decision: A formal decision document issued by a federal agency to record the decision for the public.

Rehabilitation: A management alternative and/or practice which restores landscapes to a desired scenic quality.

Reverse Osmosis (RO) System: A water purification technology that uses a semipermeable membrane to remove many types of molecules and ions from solutions (e.g., to remove dissolved solids from groundwater).

Riparian: Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Route: “Routes” represents a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as routes.

S

Saleable Minerals: Common variety minerals on the public lands, such as sand and gravel, which are used mainly for construction and are disposed by sales or special permits to local governments. See also Mineral Material Disposal.

Scale: The proportionate size relationship between an object and the surroundings in which the object is placed.

Scenery: The aggregate of features that give character to a landscape.

Scenic Area: An area whose landscape character exhibits a high degree of variety and harmony among the basic elements which results in a pleasant landscape to view.

Scenic Quality: The relative worth of a landscape from a visual perception point of view.

Scenic Quality Ratings: The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating.

Scenic Values: See Scenic Quality and Scenic Quality Ratings.

Secretary of the Interior: The U.S. Department of the Interior is in charge of the nation's internal affairs. The Secretary serves on the President's cabinet and appoints citizens to the National Park Foundation board.

Sedimentary Rocks: Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments deposited in water.

Sensitivity Levels: Measures (e.g., high, medium, and low) of public concern for scenic quality.

Settlement: A process by which soils decrease in volume. Earthquake induced settlement results when relatively unconsolidated granular materials experience vibration associated with seismic events. Local settlement can occur when areas containing compressible soils are subject to foundation or fill loads.

Special-Status Species: Federal- or state-listed species, candidate or proposed species for listing, or species otherwise considered sensitive or threatened by state and federal agencies.

State Implementation Plan (SIP): Legally enforceable plans adopted by states and submitted to USEPA for approval, which identify the actions and programs to be undertaken by the State and its subdivisions to achieve and maintain national ambient air quality standards in a time frame mandated by the Clean Air Act.

State Water Resources Control Board (SWRCB): Created in 1967, joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The mission of the nine Regional Water Quality Control Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology, and hydrology.

Stratigraphy: The order and relative position of strata (a layer of rock in the ground) and their relationship to the geological time scale.

Subsurface: Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

Sulfur Dioxide (SO_2): A pungent, colorless, and toxic oxide of sulfur formed primarily by the combustion of fossil fuels. It is a respiratory irritant, especially for asthmatics. A criteria pollutant in its own right, and a precursor of sulfate particles and atmospheric sulfuric acid.

T

Tertiary: The Tertiary Period marks the beginning of the Cenozoic Era. It began 65 million years ago and lasted more than 63 million years, until 1.8 million years ago. The Tertiary is made up of

5 epochs: the Paleocene Epoch, the Eocene Epoch, the Oligocene Epoch, the Miocene Epoch, and the Pliocene Epoch.

Texture: The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

Total Dissolved Solids: A measure of the combined content of all *inorganic* and *organic* substances contained in a liquid that are smaller than two micrometers in diameter (e.g., sodium).

Toxic: Poisonous; exerting an adverse physiological effect on the normal functioning of an organism's tissues or organs through chemical or biochemical mechanisms following physical contact or absorption.

Traditional Cultural Properties: Areas associated with the cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity.

Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

V

Vandalism (Cultural Resource): Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. Section 6 of the Archaeological Resources Protection Act states that "no person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands…unless such activity is pursuant to a permit issued under section 4 of this Act."

Variables: Factors influencing visual perception including distance, angle of observation, time, size or scale, season of the year, light, and atmospheric conditions.

Variety: The state or quality of being varied and having the absence of monotony or sameness.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor. Protection, rehabilitation, or enhancement is desirable and possible.

Visual Contrast: See Contrast.

Visual Quality: See Scenic Quality.

Visual Resources: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features).

Visual Resource Management Classes: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

Visual Resource Management (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

Visual Values: See Scenic Quality.

W

Wetlands: Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

Wilderness Area: An area formally designated by Congress as part of the National Wilderness Preservation System as defined in the Wilderness Act of 1964 (78 Stat. 891), Section 2(c).

Wilderness Study Area: A roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891). The source for both of these is BLM's IMP and Guidelines for Lands Under Wilderness Review (December 1979).