U.S. Department of the Interior
Bureau of Land Management

California Department
of Fish & Wildlife

# Crimson Solar Project

# Final Environmental Impact Statement and Proposed Land Use Plan Amendment to the California Desert Conservation Area Plan

DOI-BLM-CA-D060-2017-0029-EIS

## January 22, 2021

Estimated Federal Lead Agency Total Costs Associated with Developing and Producing this Final EIS and Proposed PA

$365,000

United States Department of the Interior
Bureau of Land Management

# Crimson Solar Project
# Final Environmental Impact Statement
# and Proposed Land Use Plan Amendment to
# the California Desert Conservation Area Plan

For the

**Palm Springs-South Coast Field Office**
Palm Springs, California

## January 2021

DOI-BLM-CA-D060-2017-0029-EIS

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Palm Springs South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262
www.blm.gov/office/palm-springs-south-coast-field-office

***In Reply Refer To:***
2831-03 (P)
CAD0000.06/CAD060
CACA-51967

January 2021

Dear Reader:

I am pleased to announce the availability of the Final Environmental Impact Statement (EIS) and Proposed Land Use Plan Amendment to the California Desert Conservation Area Plan (PA) for the Crimson Solar Project (Project). Sonoran West Solar Holdings, LLC (Applicant), a wholly-owned subsidiary of Recurrent Energy, LLC is proposing to develop a 350-megawatt (MW) solar energy plant on up to 2,500 acres of public lands managed by the Bureau of Land Management (BLM), located in the eastern portion of the Chuckwalla Valley near the city of Blythe in unincorporated Riverside County, California. The BLM is the lead agency for the PA and EIS. The Project is described in right-of-way (ROW) grant application number CACA-051967 filed with the BLM on May 12, 2009 by the Applicant.

The Final EIS and Proposed PA have been prepared in accordance with the Federal Land Policy and Management Act (FLPMA) and National Environmental Policy Act (NEPA). The California Department of Fish and Wildlife (CDFW) is the lead agency pursuant to its permitting authority under California's Fish and Game Code and the California Environmental Quality Act (CEQA). CDFW intends to rely on this Final EIS and Proposed PA when it prepares a separate Final EIR in accordance with CEQA. The Final EIS and Proposed PA and supporting information for the Project are available on the Project website at: https://eplanning.blm.gov/eplanning-ui/project/88925/510.

A combined Draft EIS/EIR/PA was published November 1, 2019, initiating a 90-day comment period that ended January 30, 2020. Public meetings were held in Palm Desert and Blythe, California, during the comment period. Appendix V of the Final EIS and Proposed PA includes all comments received by the BLM on the FLPMA and NEPA portions of the document; Appendix W contains responses to those comments. Comments on State-law-specific items will be addressed by CDFW in the Final EIR.

The Final EIS and Proposed PA is not a decision document. Copies of the EIS have been sent to affected Federal, tribal, state, and local government agencies. Copies are available for public review on the Project website. To view a hard copy at one of the locations shown below, please contact the Project Manager listed at the end of this letter to make an appointment.

| | |
|---|---|
| BLM Palm Springs - South Coast Field Office<br>1201 Bird Center Drive<br>Palm Springs, CA 92262 | BLM California State Office<br>2800 Cottage Way, Suite W-1623<br>Sacramento, CA 95825 |

Pursuant to the BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for the Proposed California Desert Conservation Area (CDCA) Plan Amendment and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions contained therein. The Final EIS and Proposed CDCA Plan Amendment are open for a 30-day protest period following the date the Environmental Protection Agency publishes its Notice of Availability in the *Federal Register*.

The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g., meeting minutes or summaries, correspondence, etc.)

Emailed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular mail or overnight delivery postmarked by the close of the protest period. Under these conditions, the BLM will consider the emailed protest as an advanced copy and will afford it full consideration. If you wish to provide the BLM with such advance notification, please direct emailed protests to: protest@blm.gov. All protests must be in writing and mailed to one of the following addresses:

| Regular Mail: | Overnight Delivery (non-USPS delivery service): |
|---|---|
| Director (210) | Director (210) |
| Attn: Protest Coordinator | Attn: Protest Coordinator |
| P.O. Box 261117 | 2850 Youngfield Street |
| Lakewood, CO 80226 | Lakewood, CO 80215 |

**All protests must be postmarked on or before the close of the protest period.**

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 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.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

Upon resolution of all land use plan protests, the BLM will issue a Record of Decision (ROD). The ROD will be available to all parties on the Project website.

Unlike land use planning decisions, implementation decisions included in this Final EIS are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals (OHA), Interior Board of Land Appeals (IBLA) pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues a ROD.

Thank you for your continued interest in the EIS and Proposed PA for this project. We appreciate your contributions. For additional information or clarification regarding this document or the planning process, or to make an appointment to view a hardcopy of the Final EIS and Proposed PA, please contact Miriam Liberatore, Project Manager, by email at mliberat@blm.gov or by phone at (541) 618-2412.

Sincerely,

JEREMIAH KARUZAS

Digitally signed by JEREMIAH KARUZAS
Date: 2021.01.12 14:04:33 -08'00'

Jeremiah Karuzas
Acting Field Manager

**California Desert District**
**Crimson Solar Project**
**Final Environmental Impact Statement and Proposed Plan Amendment**

Lead Agency for National Environmental Policy Act (NEPA):
Bureau of Land Management (BLM)
Palm Springs-South Coast Field Office, Palm Springs, California

Lead Agency for California Environmental Policy Act (CEQA):
California Department of Fish and Wildlife (CDFW)

For further information, contact:

Magdalena Rodriguez, Project Manager
CDFW Inland Deserts Region
3602 Inland Empire Blvd Suite C-220
Ontario, CA 91764

Miriam Liberatore, Project Manager
Bureau of Land Management
3040 Biddle Road
Medford, OR 97504

**Abstract**

This Final Environmental Impact Statement (EIS) addresses a proposed United States Bureau of Land Management (BLM) amendment to the *California Desert Conservation Area Plan of 1980, as amended* (CDCA Plan); a possible decision to issue a right-of-way (ROW) grant for construction, operation, maintenance, and decommissioning of a solar electricity generation facility on BLM-administered public land; and possible CDFW approval of a Lake and Streambed Alteration Agreement (LSAA) and issuance of an Incidental Take Permit (ITP).

The enclosed Final EIS and Proposed PA analyzes four alternatives. Alternative A, the Applicant's Proposed Alternative, would develop a 350 MW solar energy plant and related facilities on approximately 2,500 acres of BLM-administered public lands in unincorporated Riverside County, California. Construction practices would include mowing and rolling the vegetation, grading the Project site, and trenching for underground cable installation. Alternative B would modify Alternative A to include three Design Elements that minimize grading during site preparation and maintain more of the native vegetation (DE-1), avoid or limit trenching by placing electrical wiring aboveground (DE-2), and place transformer inverter and energy storage systems on elevated support structures (DE-3). Alternative C would reduce the size of the Project by approximately 460 acres, reducing ground disturbance within key areas containing sensitive vegetation, sand dune habitat, and cultural resources. Alternative D is the No Action/No Project alternative, under which BLM would not amend the CDCA Plan or grant the ROW, and the CDFW would not issue an LSAA or ITP for the Project.

Chapter 2 discusses the proposed Crimson Solar 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 each of the alternatives. The full text of all mitigation measures is provided in Appendix B and the applicable regulations for each resource topic are provided in Appendix E.

The Field Manager of the Palm Springs-South Coast Field Office has the authority to manage future activities related to the ROW grant, if a grant is issued, and is the BLM Authorized Officer for the NEPA and CDCA Plan Amendment requirements.

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# Volume 2 – Appendices

# EXECUTIVE SUMMARY

## ES.1 Background and Project Overview

Sonoran West Solar Holdings, LLC (Applicant), a wholly owned subsidiary of Recurrent Energy, proposes to construct, operate, maintain, and decommission the Crimson Solar Project (Project). The Project is an approximately 350-megawatt (MW) photovoltaic (PV) solar energy generating facility and related infrastructure. If approved, the Project would be constructed on BLM-administered public lands in the eastern portion of Chuckwalla Valley near the City of Blythe, within unincorporated Riverside County, California. The Project would generate solar power and deliver it to the California electrical grid through 230 kV gen-tie lines to interconnect with the Colorado River Substation (CRS), owned by Southern California Edison (SCE). This Final Environmental Impact Statement (EIS) and Proposed Land Use Plan Amendment to the California Desert Conservation Area Plan (PA) analyzes the Project's potential impacts under the National Environmental Policy Act (NEPA). This document is published by the Bureau of Land Management (BLM) and was prepared by the BLM and California Department of Fish and Wildlife (CDFW).

To initiate the environmental review process under NEPA, the Applicant submitted an application to the BLM requesting a right-of-way (ROW) grant (Case file number CACA-051967) on approximately 2,500 acres of public lands. Following final engineering and design, those areas that would remain undisturbed and outside of fenced Project areas would be excluded from the ROW grant. Because the initial application for this Project was filed before June 30, 2009, and because the site is located within a Solar Energy Zone as identified in the Western Solar Plan, the BLM is processing the Crimson Solar Project proposal under the California Desert Conservation Area (CDCA) land use plan decisions that were in place before the Desert Renewable Energy Conservation Plan (DRECP) land use plan amendment to the CDCA plan was adopted. If a ROW grant is approved for the Project, then a land use plan amendment (PA) also would be required to identify the site as an appropriate site for the proposed use, consistent with the CDCA plan; this document presents the proposed PA in Chapter 2.

Although this Final EIS and Proposed PA includes analysis of environmental impacts prepared by CDFW pursuant to the California Environmental Quality Act (CEQA) under its authority as the lead agency for applications filed with CDFW for Incidental Take Permit (ITP)[1] and Lake and Streambed Agreement (LSAA)[2] authorizations, this is not the Final EIR. CDFW's decision regarding issuance of the ITP and the LSAA authorizations is a discretionary action requiring CEQA review and is separate from the BLM ROW process; however, the effects of CDFW's decision are evaluated as part of the Project within this Final EIS and Proposed PA. CDFW intends to rely on this Final EIS and Proposed PA when it prepares a separate Final EIR in accordance with CEQA.

## ES.2 Purpose and Need

### ES.2.1 BLM Purpose and Need

The BLM's purpose and need for the Project is to respond to the ROW grant application under Title V of the Federal Land Policy and Management Act FLPMA (43 USC Section 1761(a)(4)) to construct, operate, maintain, and decommission a solar PV facility on public lands in compliance with the FLPMA, BLM ROW regulations,

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1 An ITP allows take of a species listed under the California Endangered Species Act if such take is incidental to, and not the purpose of, carrying out an otherwise lawful activity.

2 The Lake and Streambed Alteration (LSA) Program reviews projects that would alter any river, stream, or lake and conditions projects to conserve existing fish and wildlife resources.

and other applicable federal laws. In accordance with Section 103(c) of the FLPMA, 43 USC Section 1702(c), public lands are to be managed for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant ROWs on public lands for systems for generation, transmission, and distribution of electric energy (43 USC Section 1761(a)(4)). Taking into account BLM's multiple-use mandate, the BLM will decide whether to approve, to approve with modifications, or to deny issuance of a ROW grant to the Applicant for the Project. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest, and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)).

Concurrent with its decision on the ROW, the BLM will decide whether to amend the CDCA Plan. The CDCA Plan, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission that are not identified in the CDCA Plan be added to it through the land use plan amendment process. CDCA boundaries are shown in Figure 1-1.

### ES.2.2 CDFW and Applicant's Project Objectives

The Applicant's Project objectives are to:

1. Generate 350 MW of renewable electricity to assist the State of California in achieving its 50 percent renewable portfolio standard for 2030 by providing a significant new source of wholesale renewable energy.
2. Assist California utilities in meeting their obligations under the California Public Utilities Commission's (CPUC's) Energy Storage Framework and Design Program, including the procurement target of 1,325 MW by 2020, by providing up to 350 MW of storage capacity.
3. Facilitate grid interconnection of intermittent and variable PV generation and minimize line losses associated with off-site storage by collocating substantial electrical storage capacity at the PV facility site.
4. Realize economies of scale inherent in constructing a utility-scale solar facility on contiguous lands in the immediate vicinity of a high-voltage interconnection to the California Independent System Operator (CAISO)-controlled grid.
5. Bring living-wage skilled jobs to Riverside County through Project development, construction, and operation.

For purposes of CEQA, CDFW also includes the following objectives:

1. Protect and conserve wildlife resources and to minimize environmental impacts and land disturbance by, among other things, siting the facility on relatively flat lands with high solar insolation, in close proximity to established utility corridors, existing substation with available capacity to facilitate interconnection, and accessible roads.
2. Promote environmentally responsible development that minimizes incidental take by implementing species-specific minimization and avoidance measures.
3. Protect and conserve the resources of the State of California and mitigate any impacts to these resources.

## ES.3 Project and Alternatives

### ES.3.1 Comparison of Alternatives

This Final EIS and Proposed PA considers three action alternatives consisting of a Plan Amendment and Project components, and one No Plan Amendment/No Action/No Project alternative. Each of the following alternatives is described in detail in Chapter 2, Project and Alternatives:

**Alternative A: Project.** The Project would consist of 2,500 acres of BLM owned land, which would provide for a maximum combined solar facility capacity of 350 MW. This alternative also would include collector lines, a substation and switchyard, and an operation and maintenance building. This alternative would occupy approximately 2,500 acres on BLM-administered land. This alternative would require a CDCA Plan Amendment, a BLM-issued ROW, and CDFW approval of an ITP and a LSAA.

**Alternative B.** Similar to Alternative A, this alternative would also consist of 2,500 acres of BLM owned land, and would provide for a maximum combined solar facility capacity of 350 MW. Unlike Alternative A, Alternative B would include all three of the following Design Elements:

**DE-1:** Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success

**DE-2:** Avoiding or limiting trenching by placing electrical wiring aboveground

**DE-3:** Placing transformer, inverter, and energy storage systems on elevated support structures in lieu of solid cement or steel foundations

This alternative would also require a CDCA Plan Amendment, a ROW, and CDFW approval of an ITP and a LSAA.

**Alternative C.** Alternative C, the Reduced Acreage Alternative, was developed to avoid key areas containing sensitive vegetation, sand dune habitat, and cultural resources. This alternative has been refined since publication of the Draft EIS/EIR/PA to include an alternative location and layout of the gen-tie, on-site substations, energy storage system, and O&M building and to further reduce the solar plant site footprint. Additionally, this alternative would consist of two units: Unit 1, a solar facility, and Unit 2, an Energy Storage System (ESS). The two units could operate independently of each other and may be constructed in different time periods. It is anticipated that the separate units would be issued separate ROW grants. Alternative C would be approximately 2,040 acres in size. This alternative would require a CDCA Plan Amendment, ROW, and CDFW approval of an ITP and a LSAA. The Final EIS and Proposed PA analyses Alternative C without the implementation of Design Elements listed above for Alternative B; however, the BLM could choose to combine any of these Design Elements with the Alternative C footprint in selecting an alternative to approve.

**Alternative D: No Plan Amendment/No Action/No Project.** Under Alternative D, the BLM would not authorize a ROW grant for the Project or amend the CDCA Plan, and CDFW would not approve the ITP and LSAA. Because the Project would not be approved, no new structures or facilities would be constructed, operated, maintained, or decommissioned on the site, and no related ground disturbance or other Project impacts would occur.

## ES.3.2 Federal Lead Agency Preferred Alternative

Under NEPA, identification of the “preferred alternative” is a preliminary indication of the Lead Agency’s preference of action among the Project and alternatives. A NEPA Lead Agency may select a preferred alternative for a variety of reasons, including the agency’s priorities, in addition to the environmental considerations discussed in the EIS. In accordance with NEPA (40 CFR 1502.14(e)), the BLM preliminarily has identified Alternative C, as modified by the two design elements from Alternative B (Design Element (DE)-1 and DE-3), as the preferred alternative.

## ES.3.3 CEQA Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives. In general, the environmentally superior alternative is defined as the alternative with the least adverse impacts to the environment.

As noted in Section 2.7, the No Plan Amendment/No Action/No Project Alternative in this analysis is reasonably likely to result in solar development of some kind and in some configuration on the proposed site consistent with the property’s land use designations under the DRECP and Western Solar Plan. Because the specific environmental impacts of any future solar development proposed cannot be known with sufficient certainty at this time to provide a meaningful point of comparison, it would be speculative to identify the No Plan Amendment/No Action/No Project Alternative as the environmentally superior alternative.

CDFW has preliminarily identified the combination of DE-1 and DE-3 under Alternative B and the facility sizes, locations, and separation by unit under Alternative C is preliminarily identified as the environmentally superior alternative based on the comparison of the various alternatives' potential environmental impacts. Nonetheless, determining an environmentally superior alternative is difficult because of the many factors that must be balanced. Although this analysis reaches a preliminary conclusion in this regard, it is possible that, with additional information received in or developed during the public review process, CDFW could choose to balance the importance of each impact area differently or reach a different conclusion prior to completion and certification of the Final EIR and taking action on the requested Lake and Streambed Alteration Agreement and take authorization.

# ES.4 Environmental Consequences

Table ES-1 summarizes the environmental impacts that would occur as a result of the Project and alternatives.

## ES.4.1 Areas of Controversy

Comments were received during the scoping process for the Project. The scoping process is described and the public input received during scoping is provided in Appendix D, Notice of Intent, Notice of Preparation, Scoping Report. Based on input received from agencies, members of the public and others, areas of controversy related to the Project include:

**Air Resources:** Concerns related to potential air quality impacts as compared to national, state and local ambient air quality standards. See Section 3.2, Air Resources.

**Biological Resources:** Concerns related to the disturbance of native plant and wildlife habitats. Specific areas of controversy relating to biological resources relate to wildlife connectivity, sensitive plant communities, special-status species, and mitigation measures. See Sections 3.3, Biological Resources.

**Cultural Resources:** Concerns related to damage to and loss of cultural and historic artifacts and other resources; including Indian sacred sites. See Section 3.5, Cultural Resources.

**Environmental Justice:** Concerns related to whether low-income, minority or tribal populations that may disproportionately affected exist within the geographic scope of the Project. See Section 3.13, Socioeconomics, Environmental Justice, Population and Housing.

**Hazards and Public Safety:** Concerns related to the existing presence of hazardous materials and use and disposal of hazardous materials and wastes. See Section 3.8, Hazards and Hazardous Materials.

**Lands and Realty:** Concerns related to the appropriate land use of the proposed Project site and the Project's consistency with local, state, and federal plans. See Section 3.9, Lands and Realty.

**Recreation and Public Access:** Concerns related to the use of the Project site for the proposed solar facility, given that the Project area has outstanding opportunities for recreation. See Section 3.12, Recreation and Public Access.

**Transportation:** Concerns regarding Project consistency with applicable plans as well as impacts related to construction traffic. See Section 3.15, Transportation.

**Utilities and Public Services:** Concerns regarding the quantity of construction and demolition waste the Project could generate and how this waste would be disposed. See Section 3.16, Utilities and Public Services.

**Visual Resources:** Concerns related to the effects of night lighting and industrial facilities on the visual landscape surrounding the Project site and degradation of the visitor experience in the general area. See Section 3.17, Visual Resources.

**Water Resources:** Concerns related generally to surface water and groundwater use and associated effects. See Section 3.18, Water Resources.

**Statement of Purpose and Need:** Concerns related to how the Purpose and Need of the Project is stated. See Chapter 1, Introduction and Purpose and Need.

## ES.4.2 Issues to Be Resolved

The BLM will decide whether to grant the requested ROW, grant the ROW with modifications, or deny the ROW. Modifications may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). The BLM also will decide whether or not to amend the CDCA Plan to identify the application area as suitable for the proposed solar energy development.

The CDFW, as CEQA lead agency, will prepare a separate Final EIR and determine the adequacy of that document. If adequate, CDFW will certify the document as complying with CEQA. After the Final EIR is completed and certified, the CDFW will make a final decision on the Project. CDFW will decide whether to approve, modify, or deny the requested ITP and LSAA.

**TABLE ES-1**
**SUMMARY OF IMPACTS BY ALTERNATIVE**

| Resource/ Environmental Factor | Alternative A (Project) | Alternative B | Alternative C | Alternative D |
|---|---|---|---|---|
| Air Resources | *Construction (max)*: ROG=2.3 tons/yr; NOx=20.3 tons/yr; CO=48.2 tons/yr; PM10=23.1 tons/yr; and PM2.5=3.6 tons/yr.<br>*Operation and Maintenance*: ROG= 0.1 lbs/day; NOx=3.7 lbs/day; CO=2.4 lbs/day; PM10=34.9 lbs/day; and PM2.5=5.3 lbs/day.<br>*Decommissioning*: Comparable in type and magnitude, but likely to be lower than, the construction emissions.<br>Maximum daily construction-related NOx and PM10 emissions and maximum annual PM10 emissions would exceed air district thresholds. | *Construction (max)*: ROG=2.3 tons/yr; NOx=20.2 tons/yr; CO=47.6 tons/yr; PM10=22.6 tons/yr; and PM2.5=3.3 tons/yr.<br>*Operation and Maintenance*: Same as Alternative A.<br>*Decommissioning*: Comparable in type and magnitude, but likely to be lower than, the construction emissions.<br>Maximum daily construction-related NOx and PM10 emissions and maximum annual PM10 emissions would exceed air district thresholds. | *Construction (max)*: Same as Alternative A.<br>*Operation and Maintenance*: Same as Alternative A.<br>*Decommissioning*: Comparable in type and magnitude, but likely to be lower than, the construction emissions.<br>Maximum daily construction-related NOx and PM10 emissions and maximum annual PM10 emissions would exceed air district thresholds. | No impact. |
| Biological Resources | *Vegetation Communities:* Impacts to 2,504.4 acres, including: 290.6 acres of riparian community (289.4 acres of Creosote Bush – White Bursage/Big Galleta Grass Association; 1.2 acres of Blue Palo Verde – Ironwood Woodland); and 2,198.4 acres of upland community (1,943 acres of Creosote Bush – White Bursage Scrub, 51.8 acres of Creosote Bush Scrub, 121.6 acres of White Bursage Scrub, 0.7 acres of Brittlebush Scrub, 67.5 acres of Creosote Bush—White Bursage—Ocotillo Association, and 29.2 acres of Desert Dunes). Would also result in the loss or alteration of approximately 90.6 acres of unvegetated ephemeral washes and 1.2 acres of riparian microphyll woodland habitat (blue palo verde–ironwood woodland) through grading, disturbance, site development, and access roads<br>*State and Federal Wetlands*: No impacts on state wetlands or federal wetlands or waters.<br>*Special-Status Plants:* Four special-status plant species detected on site. Impacts on special-status plants include: 2,153 ribbed cryptantha, 420 Hardwood's eriastrum, 105 Utah vine milkweed, and 11 desert unicorn plant.<br>*Special-Status Wildlife:* Alternative A has the potential to impact wildlife listed under both FESA and CESA, including: desert tortoise, Yuma Ridgway's rail, southwestern willow flycatcher, western yellow-billed cuckoo and least Bell's vireo; as well as, wildlife listed only under CESA, including: Arizona Bell's vireo, Swainson's hawk, elf owl, Gila woodpecker, willow flycatcher, and bank swallow; and additional special-status wildlife that are not listed under FESA or CESA. | *Vegetation Communities:* Alternative B would directly and permanently impact the same vegetation community acreages as those described under Alternative A. However, adverse effects to vegetation communities would be reduced under Alternative B as a result of the reduced severity of ground disturbance. Under Alternative B, DE-1 would reduce long-term disturbance to vegetation communities by approximately 41.09 acres, and DE-2 would reduce long-term disturbance to vegetation communities by approximately 53 acres. While Alternative B would result in a reduction in disturbance of ephemeral washes, Alternative B would not result in a reduction of impacts to microphyll woodlands.<br>*State and Federal Wetlands:* Same as Alternative A.<br>*Special-Status Plants:* Adverse effects to special-status plants would be reduced overall under Alternative B. If present, fewer individual plants, including Harwood's eriastrum, desert unicorn plant, ribbed cryptantha, and Utah vine milkweed, would be removed by ground disturbance.<br>*Special-Status Wildlife:* Alternative B may reduce adverse effects associated the loss of habitat for resident and foraging migrant species by preserving residual habitat value under DE-1 and reducing the severity and duration of impacts within a portion of the site under DE-2 and DE-3. | *Vegetation Communities:* Overall, Alternative C would reduce impacts by approximately 420.9 acres from 2,504.7 to 2,083.5 acres of vegetation communities, including reduction of 83.8 acres of Creosote Bush – White Bursage/Big Galleta Grass Association and 393.1 acres of other Sonoran Desert Scrub Communities. Direct and permanent impacts on ephemeral washes would be reduced to 79.3 acres, a reduction of 11.3 acres compared to Alternative A. Alternative C would not result in a reduction of impacts on microphyll woodlands.<br>*State and Federal Wetlands:* Same as Alternative A.<br>*Special-Status Plants:* Alternative C would impact 11 Harwood's eriastrum individuals, reducing impacts on this species by 409 individuals.<br>*Special-Status Wildlife:* Alternative C would impact 2,083.5 acres of habitat, reducing impacts related to habitat loss and degradation by 420.9 acres for resident and foraging wildlife species.<br>*Invasive Species:* Reduced indirect impacts to off-site habitat from invasive plants.<br>*Wildlife Movement:* Adverse effects to wildlife movement would be reduced under Alternative C as the approximately 0.25-mile footprint reduction along the northwestern project boundary and within the linkage area would provide more space for wildlife movement around the Project site. | No impact. |

**TABLE ES-1 (CONTINUED)**
**SUMMARY OF IMPACTS BY ALTERNATIVE**

| Resource/ Environmental Factor | Alternative A (Project) | Alternative B | Alternative C | Alternative D |
|---|---|---|---|---|
| Biological Resources (cont.) | *Invasive Species:* Indirect impacts on off-site habitat from invasive plants.<br>*Wildlife Movement:* Alternative A would reduce available habitat (up to 0.28 percent) within the 5-mile-wide desert linkage network across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy Mountains. The remaining habitat would be approximately 2 miles wide between the Project site and Ironwood State Prison to the west of the Project site and a 1.2-mile-wide corridor would be available for wildlife to pass the Project site and access the I-10 crossing northeast of the Project site. | *Invasive Species:* Reduced indirect impacts to off-site habitat from invasive plants.<br>*Wildlife Movement:* Same as Alternative A. | | |
| Greenhouse Gas Emissions | Net reduction of over 354,209 metric tons $CO_2e$ per year. | Net reduction of over 354,224 metric tons $CO_2e$ per year. | Net reduction of over 354,384 metric tons $CO_2e$ per year. | No impact, no net reduction of metric tons $CO_2e$ per year. |
| Cultural Resources | Potential for direct impacts on 167 sites and 183 isolates. Potential for adverse effects on 17 sites eligible or treated as eligible for listing in the National Register of Historic Places.<br>No adverse indirect impacts on sites within the indirect effects APE. | Reduced ground disturbance and greater flexibility in Project component siting could reduce potential direct impacts on cultural resources, both known and unknown.<br>Indirect impacts are the same as Alternative A. | Potential for direct impacts on 95 sites and 97 isolates. No adverse effect on the 17 sites eligible or treated as eligible for listing in the National Register of Historic Places (sites would be avoided).<br>Indirect impacts are the same as Alternative A. | No impact. |
| Energy Conservation | *Construction:* Annual average consumption of 2,223 MWh during construction. Average annual consumption of approximately 962,356 gallons of diesel and 180,827 gallons of gasoline.<br>*Operation and Maintenance:*<br>Alternative A would generate up to 1,533,000 MWh of electricity annually and completely offset the amount of electricity used on-site.<br>*Decommissioning:* Comparable in type and magnitude, but likely to be lower than, the construction emissions. | *Construction, Operation, and Decommissioning:* Same as Alternative A. As with Alternative A, Alternative B would generate up to 1,533,000 MWh of electricity annually. | *Construction, Operation, and Decommissioning:* Slight reduction in construction energy consumption compared to Alternative A. As with Alternative A, Alternative C would generate up to 1,533,000 MWh of electricity annually. | No impact. |
| Geology and Soil Resources | Low potential for adverse soil conditions, ground subsidence due to groundwater pumping, and seismic-related ground failures.<br>Low potential for soil erosion from water and wind. | Same as Alternative A with regard to adverse soil conditions, ground subsidence due to groundwater pumping, and seismic-related ground failures. Reduced potential for soil erosion due to less disturbance of surface soils. | Same as Alternative A with regard to adverse soil conditions, ground subsidence due to groundwater pumping, and seismic-related ground failures. Reduced potential for soil erosion due to less disturbance of surface soils. | No impact. |
| Hazards and Hazardous Materials | Low likelihood of accidental release of hazardous materials used on site. | Reduced likelihood of accidental release of hazardous materials used on site. | Reduced likelihood of accidental release of hazardous materials used on site. | No impact. |

**TABLE ES-1 (CONTINUED)**
**SUMMARY OF IMPACTS BY ALTERNATIVE**

| Resource/ Environmental Factor | Alternative A (Project) | Alternative B | Alternative C | Alternative D |
|---|---|---|---|---|
| Land Use, Lands, and Realty | Restriction of use on 2,500 acres of BLM-administered public lands.<br>During construction and decommissioning, access to open routes for OHV use may be restricted. | Restriction of use on 2,500 acres of BLM-administered public lands.<br>Impacts to Lands and Realty would be similar to that of Alternative A. | Restriction of use on 2,040 acres of BLM-administered public lands.<br>Impacts to Lands and Realty would be likely lower, than that of Alternative A. | No impact. |
| Noise | *Construction and Decommissioning*: Temporary construction noise levels would not increase existing ambient levels by more than 10 dBA in any construction phase.<br>*Operation and Maintenance*: Noise levels would be imperceptible at the nearest sensitive receptor. | *Construction, Operations, and Decommissioning*: Same as Alternative A. | *Construction, Operations, and Decommissioning*: Same as Alternative A. | No impact. |
| Paleontological Resources | *Construction:* Project site consists of high sensitivity sediments and represents what may be the third most abundant terrestrial Pleistocene fossil assemblage in California. With the implementation of Mitigation Measures PALEO-1 through PALEO-5, there would not be any adverse effects on paleontological resources.<br>*Operations, Maintenance and Decommissioning:* Project operations are not anticipated to involved further ground disturbance above and beyond that occurring during construction, and so would not constitute adverse effects on paleontological resources. | *Construction:* Reduced acres affected compared to Alternative A. The depth of the ground disturbance associated with DE-1, DE-2, and DE-3 would be shallower than compared to Alternative A. Thus, Alternative B would have less potential to impact buried paleontological resources and would require less effort associated with monitoring and fossil collection prior to construction.<br>*Operations, Maintenance and Decommissioning:* Same as Alternative A. | *Construction:* Reduced acres affected compared to Alternative A.<br>*Operations, Maintenance and Decommissioning:* Same as Alternative A. | No impact. |
| Recreation and Public Access (Off-Highway Vehicles) | **On-Site**<br>*Construction, Operation, Decommissioning:* Conversion of approximately 2,500 acres of public lands to a solar project could disrupt dispersed recreational activities by making the site inaccessible for recreational use.<br>**Off-Site**<br>*Construction, Operation, Decommissioning:* Impacts from noise, fugitive dust, and traffic could impact off-site recreational facilities. Temporary increase in demand for accommodations during construction and the resulting potential impact on LTVAs and other nearby recreation areas.<br>**Recreational Use of Regional and Local Facilities**<br>*Construction, Operation, Decommissioning:* Due to the distance between the Project site and regional and local recreational facilities there would be no impact on users of these facilities. | *Construction, Operation, and Decommissioning*: Same as Alternative A. | *Construction, Operation, and Decommissioning:* Reduced acres affected compared to Alternative A | No impact. |

**TABLE ES-1 (CONTINUED)**
**SUMMARY OF IMPACTS BY ALTERNATIVE**

| Resource/ Environmental Factor | Alternative A (Project) | Alternative B | Alternative C | Alternative D |
|---|---|---|---|---|
| Recreation and Public Access (Off-Highway Vehicles) (cont.) | **OVH Use**<br>*Construction and Decommissioning:* Short-term closures of the portion of open route MM703 could be required.<br>*Operations and Maintenance:* Long-term closure of open route MM703 or any other open OHV routes would not be required. | | | |
| Socioeconomics, Environmental Justice, Population and Housing | *Construction:* Employment of 102 to 320 workers (average) and a maximum work force of 180 to 427 workers. Most, if not all, expected to live within two hours of site.<br>• No new housing or motel development induced.<br>• Total direct construction employee compensation income of $175 million.<br>• Total economic output of $475 million.<br>• *Operation and Maintenance:* Annual employment of up to 10 full-time workers, who expected to live close to the site.<br>• No new housing growth induced.<br>• Total annual direct employee compensation of $0.5 million.<br>• Total annual indirect and induced economic benefits of $1.575 million and 10 jobs.<br>*Decommissioning:* Employment of approximately 320 workers. Temporary spending and employment benefit from deconstruction.<br>*Environmental Justice*: Impacts on cultural and historic resources with tribal values could result in a disproportionately high and adverse impact on Native Americans. | *Construction, Operation, and Decommissioning:* Same as Alternative A.<br>*Environmental Justice*: Same as Alternative A. | *Construction, Operation, and Decommissioning:* Same as Alternative A.<br>*Environmental Justice*: Reduced impacts on cultural and historic resources with tribal values; could still result in a disproportionately high and adverse impact on Native Americans but reduced compared to Alternative A. | No impact and no economic benefit. |
| Special Designations | No direct impacts. Potential minor indirect effects from dust, noise, traffic, and visual contrast. | Same as Alternative A. | Same as Alternative A. | No impact. |
| Transportation | *Construction and Decommissioning*: Increased traffic (total of 1,072 one-way daily vehicle trips) with no significant change in LOS on affected roadways.<br>*Operation and Maintenance*: Minor traffic increase (10 daily employee trips and 10 daily delivery trips). | *Construction, and Decommissioning:* Reduction in ground disturbance would reduce the number of construction-period water delivery truck trips by 125 daily one-way trips.<br>*Operation and Maintenance:* Same as Alternative A. | *Construction and Decommissioning:* Reduction in ground disturbance would reduce the number of construction-period water delivery truck trips by 56 daily one-way trips.<br>*Operation and Maintenance:* Same as Alternative A. | No impact. |

**TABLE ES-1 (CONTINUED)**
**SUMMARY OF IMPACTS BY ALTERNATIVE**

| Resource/ Environmental Factor | Alternative A (Project) | Alternative B | Alternative C | Alternative D |
|---|---|---|---|---|
| Utilities and Public Services | *Construction*: 1,000 AF of water would be required during the 2-year construction phase.<br>*Operation and Maintenance*: 660 acre-feet of water consumption over 30 years.<br>*Decommissioning*: PV panels recycled; non-recyclable waste landfilled. Landfill capacity adequate.<br>No impact on public services. | *Construction, Operation, and Maintenance:* Reduced water consumption.<br>*Decommissioning*: Same as Alternative A.<br>No impact on public services. | *Construction, Operation, and Maintenance:* Reduced water consumption.<br>*Decommissioning*: Reduced amount of non-recyclable solid waste landfilled.<br>No impact on public services. | No impact. |
| Visual Resources | *Construction*: Mitigable short-term impacts from construction lighting and visible dust plumes; adverse effects from large-scale visual disturbance in the landscape.<br>*Operation and Maintenance*: Strong visual contrast. Would meet VRM Class IV objectives.<br>*Decommissioning*: Similar to construction. Site would be restored after decommissioning. | *Construction*: Impacts would be reduced compared to Alternative A because less grading and overall ground and vegetation disturbance would occur.<br>*Operation, Maintenance, and Decommissioning:* Same as Alternative A. | *Construction, Operation, and Maintenance, and Decommissioning:* Same as Alternative A, but occurring on a smaller land area. | No impact. |
| Water Resources | Minor impacts related to alteration of stormwater flows and drainage, including re-routing of existing flowpaths, erosion, and surface water quality. No adverse impacts on groundwater levels and storage anticipated, but mitigation would provide for monitoring and correction. | Reduced intensity of impacts compared to Alternative A related to reduced ground disturbance and construction water consumption. | Reduced intensity of impacts compared to Alternative A related to reduced ground disturbance and construction water consumption. | No impact. |
| Wildland Fire Ecology | *Construction and Decommissioning*: Slight increase in threat of wildland fires in area due to construction and demolition activities.<br>*Operation and Maintenance*: Increased risk of wildland fire due to potential for establishment of non-native plants. Implementation of Mitigation Measures BIO-15 (Wildfire Prevention), BIO-16 (Weed Management), and FIRE-1 (Fire Safety Plan), associated vegetation clearance standards, and adherence to building codes relevant to fire safety and other applicable laws and regulations, would reduce wildfire ignition potential and wildfire risk. | *Construction, Operation, and Maintenance, and Decommissioning:* Slightly increased risk of impacts from wildland fire compared with Alternative A because of the use of aboveground wiring (DE-2), which has a greater potential to ignite a wildfire than buried wiring. In addition, Alternative B would minimize vegetation removal beneath the solar panels (DE-1), which would also create a greater likelihood of wildfire ignition because the solar wiring would be installed along the underside of the solar panels and in close proximity to vegetation. | *Construction, Operation, and Maintenance, and Decommissioning:* Reduced acres affected compared to Alternative A. | No impact. |

# CHAPTER 1
# Introduction and Purpose and Need

## 1.1 Introduction

### 1.1.1 Project and Process

This Final Environmental Impact Statement (EIS) and Proposed Land Use Plan Amendment (PA) to the California Desert Conservation Area Plan has been prepared by the Bureau of Land Management (BLM) and the California Department of Fish and Wildlife (CDFW) (collectively, Lead Agencies). BLM is the lead agency under the Federal Land Policy and Management Act of 1976 (FLPMA), which governs the PA process, and under the National Environmental Policy Act (NEPA), which governs the Final EIS. The California Department of Fish and Wildlife (CDFW) is the lead agency pursuant to its permitting authority under California's Fish and Game Code and the California Environmental Quality Act (CEQA).

This Final EIS and Proposed PA analyzes impacts of the Crimson Solar Project (Project or Proposed Action) described in the Plan of Development (Sonoran West Holdings 2017) submitted by Sonoran West Solar Holdings, LLC (Applicant), a wholly owned subsidiary of Recurrent Energy, LLC, in its application for a right-of-way (ROW) authorization to use land administered by the BLM. This Final EIS and Proposed PA also provides analysis of environmental impacts under CEQA in support of CDFW's consideration of applications for an Incidental Take Permit (ITP)[1] and a Lake and Streambed Alteration Agreement (LSAA);[2] however, this Final EIS and Proposed PA is not a Final EIR. CDFW intends to rely on this Final EIS and Proposed PA when it prepares a separate Final EIR in accordance with CEQA.

The Applicant proposes to construct, operate, maintain, and decommission a utility-scale solar facility within an approximately 2,500-acre ROW on BLM-administered public land in eastern Riverside County. The Project would generate up to 350 megawatts (MW) of renewable energy using photovoltaic (PV) technology and would include up to 350 MW (1,400 megawatt-hours [MWh]) of integrated energy storage capacity. Project components would include PV modules and support structures using either fixed-tilt or tracking technology; inverters, transformers, and an electrical collection system; up to four Project-specific substations; an approximately 6,000-foot-long generation tie-line; an approximately 2,000-square-foot operations and maintenance (O&M) building; either a battery or a flywheel energy storage system; and related infrastructure. The Project would interconnect to the regional electrical grid at the 230-kilovolt (kV) Colorado River Substation, which is owned and operated by Southern California Edison (SCE).

As shown in Figure 1-1, Regional Context, the Project site is located in unincorporated Riverside County, approximately 13 miles west of the city of Blythe, north of Mule Mountain, and south of Interstate 10 (I-10). The Project site is located within the California Desert Conservation Area (CDCA)[3] and the Riverside East Solar

1 An ITP allows take of a species listed under the California Endangered Species Act if such take is incidental to, and not the purpose of, carrying out an otherwise lawful activity.

2 The Lake and Streambed Alteration (LSA) Program reviews projects that would alter any river, stream, or lake and conditions projects to conserve existing fish and wildlife resources.

3 In 1976, Congress designated a 25-million-acre expanse of resource-rich desert lands in southern California as the CDCA through the Federal Land Policy and Management Act. In 2009, Congress passed the Omnibus Public Land Management Act, which directed the BLM to include lands managed for conservation purposes within the CDCA as part of the National Conservation Lands.

Energy Zone (SEZ). It is designated in the Desert Renewable Energy Conservation Plan (DRECP)[4] Land Use Plan Amendment (LUPA) as a Development Focus Area (DFA). The Project site includes portions of Sections 1, 2, 11, 12, 13, 24, and 25 within Township 7 South, Range 20 East, San Bernardino Meridian; and portions of Sections 6, 7, 17, and 18 within Township 7 South, Range 21 East, San Bernardino Meridian (see Figure 1-2, Project Location). The proposed site is not located within the adjacent Section 368 Federal Energy Corridor[5] pursuant to the West-wide Energy Corridor Final Programmatic EIS (BLM 2008), except for a short (about 1 mile) gen-tie line that would interconnect the Project to the Colorado River Substation.

As part of preliminary work, the Applicant and the BLM identified and considered potential alternatives to the Project. These included modified configurations on the proposed site; alternative PA decisions, sites, solar energy generation technologies, and energy storage technologies; and conservation and demand-side management. Of these, three "action" or "build" alternatives were determined to be potentially feasible—Alternative A: Proposed Action, which is the Project as submitted by the Applicant; Alternative B: Alternative Design, which would reduce grading, trenching, and vegetation removal during construction through specific design features; and Alternative C: Reduced Acreage Alternative, which would reduce the acreage of the Project site by 460 acres to a total of 2,040 acres. Each of the action alternatives would include BLM's amendment of the CDCA Plan of 1980, as amended (CDCA Plan) and approval of a ROW grant, and CDFW's approval of an ITP and/or LSAA. The action alternatives are described in Chapter 2; the need for a PA is summarized in Section 1.3.3. Alternative D, the No Action/No Project Alternative under which BLM would not approve a ROW grant and CDFW would not approve an ITP or LSAA, is described in Section 2.7.

Publication in the Federal Register of the U.S. Environmental Protection Agency's (USEPA's) Notice of Availability (NOA) of the Draft EIS/EIR/PA on November 1, 2019, initiated a 90-day public review and comment period under BLM Land Use Planning regulations (43 CFR 1610.2) and NEPA. Similarly, CDFW's filing of a Notice of Completion (NOC) with the California State Clearinghouse on November 1, 2019, initiated a concurrent 45-day public comment period under CEQA. Because the Draft EIS/EIR/PA was a joint document and the BLM was mandated by regulation to hold the comment period open for 90 days, CDFW elected to exercise its discretion to respond to comments that were received after the close of the 45-day CEQA review period, but within the 90-day BLM review period (Pub. Res. Code Section 21091(d); 14 Cal. Code Regs. Section 15105).

### 1.1.2 Project Background

In its original application to the BLM, the Applicant had proposed the development of the Sonoran West Solar Energy Generating Stations, a 540 MW dual-turbine solar thermal tower project on approximately 7,600 acres of combined BLM-administered and privately owned land. At that time, the Applicant was owned by BrightSource Energy, Inc. In 2016, Recurrent Energy, LLC acquired the application and began redesigning the proposed Project, including both converting the technology from solar thermal to solar PV and revising the site design, in order to avoid or minimize impacts on environmental and cultural resources.

As a result of this site design revision, in January 2016, the Applicant submitted a Plan of Development (POD) to BLM decreasing the energy output from 540 MW to 450 MW and decreasing the Project land area from 7,600 acres to approximately 4,000 acres of BLM-administered land. The 2016 POD revision was intended to substantially reduce impacts on environmental resources, including desert tortoise and riparian habitat.

Based on discussions with stakeholders and federal and state agencies, including BLM and CDFW, the Applicant undertook a site redesign process in 2017 in order to further avoid or reduce impacts on environmental and cultural resources. The 2017 POD revisions further reduced the energy output from 450 MW to 350 MW and decreased the land area from approximately 4,000 acres to 2,500 acres of BLM-administered

[4] To protect the CDCA's natural resources and facilitate development of its energy resources, the DRECP was undertaken in 2013. This collaborative, multi-stakeholder, landscape-scale planning effort comprises 22.5 million acres in the desert regions of seven California counties, 10.8 million acres of which are BLM lands. See Section 1.3.4 for more details.

[5] Section 368 of the Energy Policy Act of 2005 directed designation of corridors on federal lands for oil, gas, and hydrogen pipelines and electricity transmission and distribution within land in the 11 contiguous Western States.

land. The site redesign process further reduced potential impacts on environmental resources, including microphyll woodland areas, desert tortoise habitat, and Mojave fringe-toed lizard habitat. The 2017 POD also proposed several alternative Design Elements that could be incorporated into the Project to further reduce impacts. The alternative Design Elements would further minimize grading, trenching, and vegetation removal beyond traditional design approaches for PV projects with the objective of reducing overall long-term impacts of the proposed Project. The Applicant's efforts to redesign the Project and revise the site design from 2016 to the present are depicted in Figure 1.3, Project Evolution. The Applicant submitted a revised POD in February 2020 proposing a reconfigured gen-tie line and revised locations of other facilities; these updates are reflected in the description of Alternative C in Chapter 2. Although the revised POD does not include the Design Elements that have been incorporated into Alternative B, this POD revision does not affect the BLM's preferred alternative, described in Chapter 2, which incorporates two of the three design elements from Alternative B.

## 1.2 Purpose and Need and Project Objectives

### 1.2.1 Purpose and Need

The BLM's purpose and need for the Project is to respond to the Applicant's request under Title V of the FLPMA (43 USC Section 1761(a)(4)) for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands in compliance with the FLPMA, BLM ROW regulations, and other applicable federal laws. In accordance with Section 103(c) of the FLPMA, 43 USC Section 1702(c), public lands are to be managed for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant ROWs on public lands for generation, transmission, and distribution of electric energy (43 USC Section 1761(a)(4)). Taking into account BLM's multiple-use mandate, the BLM will decide whether to approve, approve with modifications, or deny issuance of a ROW grant to the Applicant for the Project. The BLM may include any terms, conditions, and stipulations it determines to be in the public interest, and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)).

In connection with its decision on the Project, the BLM's action also will include consideration of a concurrent amendment of the CDCA Plan. The CDCA Plan, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission that are not identified in the CDCA Plan be added to it through the land use plan amendment process. CDCA boundaries are shown in Figure 1-1.

### 1.2.2 CDFW and Applicant's Project Objectives

The Applicant's Project objectives are to:

1. Generate 350 MW of renewable electricity to assist the State of California in achieving its 50 percent renewable portfolio standard for 2030 by providing a significant new source of wholesale renewable energy.
2. Assist California utilities in meeting their obligations under the California Public Utilities Commission's (CPUC's) Energy Storage Framework and Design Program, including the procurement target of 1,325 MW by 2020, by providing up to 350 MW of storage capacity.
3. Facilitate grid interconnection of intermittent and variable PV generation and minimize line losses associated with off-site storage by collocating substantial electrical storage capacity at the PV facility site.
4. Realize economies of scale inherent in constructing a utility-scale solar facility on contiguous lands in the immediate vicinity of a high-voltage interconnection to the California Independent System Operator (CAISO)-controlled grid.
5. Bring living-wage skilled jobs to Riverside County through Project development, construction, and operation.

For purposes of CEQA, CDFW also includes the following objectives:

1. Protect and conserve wildlife resources and to minimize environmental impacts and land disturbance by, among other things, siting the facility on relatively flat lands with high solar insolation, in close proximity to established utility corridors, existing substation with available capacity to facilitate interconnection, and accessible roads.
2. Promote environmentally responsible development that minimizes incidental take by implementing species-specific minimization and avoidance measures.
3. Protect and conserve the resources of the State of California and mitigate any impacts on these resources.

# 1.3 Relationship of Project to BLM Laws, Policies, Plans, and Programs

## 1.3.1 Federal Land Policy and Management Act

BLM's authority and policy guidance for making a decision related to the Project derives from the FLPMA (43 USC Section 1701 et. seq.), which provides the BLM's overarching mandate to manage the lands and resources under its stewardship based on the principles of multiple use and sustained yield. Multiple use is a concept that directs the management of public lands and their various resources in a way that best meets the present and future needs of Americans. It is defined as "a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources" (FLPMA Section 103(c), 43 USC Section 1702(c)). The FLPMA authorizes the BLM to issue ROW grants for systems of generation, transmission, and distribution of electric energy. In processing a land use plan amendment, BLM also must comply with its Planning Regulations (43 CFR Part 1600) and the BLM Land Use Planning Handbook (H-1601-1; March 2005).

## 1.3.2 CDCA Plan

BLM-administered lands in the California Desert District are governed by the CDCA Plan. Multiple-use class boundaries that were identified in the CDCA Plan in the area surrounding the Project site are shown in Figure 1-4. The Project site is located within Multiple Use Class M (Moderate Use), defined in Appendix G of this Final EIS and Proposed PA. The CDCA Plan, while recognizing the potential compatibility of solar generation facilities on public lands, requires that all sites associated with power generation or transmission not specifically identified in the CDCA Plan (like the Project site) be considered through the PA process, and that NEPA requirements be met for the proposed use. The proposed PA decisions are described in Section 2.3. The planning criteria, description of the PA process, decision criteria for the BLM's evaluation of a PA, and analysis of consistency of the proposed PA with the CDCA Plan are provided in Appendix G. This Final EIS and Proposed PA meets BLM's NEPA requirements for consideration of the Project.

## 1.3.3 Approved Resource Management Plan Amendments/Record of Decision for Solar Energy Development in Six Southwestern States (Western Solar Plan)

To address increased interest in solar energy development and increase renewable energy production, the BLM established a Solar Energy Program in 2012 with the objective of evaluating solar energy potential on public lands and establishing solar energy policy. The BLM, in cooperation with the Department of Energy, prepared a Solar Programmatic EIS (Solar PEIS) in July 2012 (BLM 2012a). Its purpose was to evaluate the potential environmental, social, and economic effects of solar energy projects, and to determine the best management approach by which the BLM could further facilitate utility-scale solar energy development while minimizing the associated environmental impacts.

The Final Solar PEIS analyzed three alternatives for managing solar energy development on BLM-administered lands in the six-state study area, including the comprehensive Solar Energy Program, called the Western Solar Plan, which ultimately was adopted. The Western Solar Plan, adopted through the October 2012 Record of Decision (ROD) (BLM 2012b), included amendments to 89 BLM land use plans, including the CDCA Plan, to support solar energy development on public lands and to minimize potential environmental, cultural, and socioeconomic impacts. As part of the Western Solar Plan, the BLM identified priority areas (i.e., SEZs) that are well suited for utility-scale production of solar energy. The Project site is located within the Riverside East SEZ. The Western Solar Plan recognizes the Project as a “pending” ROW application. Pending applications like the proposed Project are not subject to the land use planning decisions in the Western Solar Plan (Western Solar Plan ROD Section B.1.2) or to the CDCA Plan amendments made in that decision. Therefore, if the BLM elects to approve the ROW grant application for the Project, a Project-specific PA would be required to permit the development specifically at the proposed site.

### 1.3.4 Desert Renewable Energy Conservation Plan

The DRECP LUPA was approved in September 2016 after an 8-year cooperative effort among the BLM, CDFW, the U.S. Fish and Wildlife Service, and the California Energy Commission. As ultimately approved, the purpose of the DRECP is to conserve and manage plant and wildlife communities on BLM-administered federal lands in the desert regions of California while streamlining the approval of compatible renewable energy projects. Of the approximately 10.8 million acres of public lands in the California desert, the CDCA Plan, as amended by the DRECP LUPA, allocates approximately 388,000 acres as DFAs for solar, wind, and geothermal projects, similar to the concept of the SEZs under the Western Solar Plan. The Project site is within a DFA (Figure 1-5).

Pursuant to Section II.3.2.4 of the DRECP LUPA, the DRECP does not apply to “[a] project that is proposed in a BLM SEZ and that is considered a ‘pending project’ under the [Western Solar Plan] ROD (the Project application was filed before June 30, 2009).” Because the initial application for this Project was filed before June 30, 2009, and because the site is located within a SEZ, the BLM is processing the Crimson Solar Project proposal under the CDCA land use plan decisions that were in place before the DRECP LUPA and Western Solar Plan were adopted. See Table 16 in Section II.3.2.4 of the DRECP LUPA, which expressly identifies this Project as subject to the pre-DRECP land use plan provisions and context. Although the provisions and requirements of the DRECP do not govern the Project’s proposed development at this site, substantial analysis has been conducted to determine whether the Project is consistent with the information used to develop the DRECP and its requisite Conservation and Management Actions (CMAs). For informational purposes, an analysis of the Project’s consistency with the intent of the DRECP CMAs is provided in Appendix F; however, the information in Appendix F is not intended to suggest that these CMAs apply to the Project.

On February 2, 2018, the BLM published a Notice of Intent to amend the decisions in the DRECP LUPA to the CDCA Plan (83 Fed. Reg. 4921-01). The scoping period for this amendment closed March 19, 2018. The BLM has not developed a Proposed Action or alternatives, and the effects of this amendment are not currently reasonably foreseeable; therefore, amendment of the decisions in the DRECP LUPA to the CDCA Plan is not included in the cumulative effects analysis for this Final EIS and Proposed PA.

## 1.4 CDFW’s Role in the Project

CDFW is California’s Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State (Fish and Game Code Section 711.7(a), Pub. Res. Code Section 21070, CEQA Guidelines Section 15386(a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Fish and Game Code Section 1802). It is possible that the Project may affect special status species, i.e., those that as defined by state law are protected under the California Endangered Species Act (Fish and Game Code Section 2050 et seq.), or may affect fish and aquatic habitats regulated under Fish and Game Code Section 1602. Therefore, CDFW will exercise its regulatory authority as provided by the Fish and Game Code in evaluating the Project, as well as its authority as a lead agency for purposes of CEQA.

## 1.5 Permits and Approvals

The Applicant will obtain all required permits and meet other requirements set forth by law, regulation, ordinance, and policy. Regarding requisite consultations, see Chapter 4. Table 1-1 summarizes the potential permit requirements and other entitlements that have been identified to date.

**TABLE 1-1**
**SUMMARY OF POTENTIAL PERMIT REQUIREMENTS AND OTHER APPROVALS**

| Agency | Permits and Other Requirements | Jurisdiction/Purpose |
|---|---|---|
| **Federal Agencies** | | |
| Bureau of Land Management (BLM) | Right-of-Way (ROW) Grant | Authorization to use the affected BLM-administered public lands as requested for the Project |
| | California Desert Conservation Area (CDCA) Plan Amendment | Required if a ROW grant were authorized for a solar power generating facility on the Project site |
| United States Fish and Wildlife Service (USFWS) | Federal Endangered Species Act (FESA) Section 7 Incidental Take Statement | Consultation and exemption for potential take of threatened and endangered species listed under the FESA (16 USC 1531 et seq.) |
| **State Agencies** | | |
| California Department of Fish and Wildlife (CDFW) | California Endangered Species Act (CESA) Consistency Determination or Incidental Take Permit | Potential impacts on species that are protected under the CESA (Fish and Game Code Section 2050 et seq.) |
| | Streambed Alteration Agreement | Modifications to streambeds (Fish and Game Code Section 1602) |
| Colorado River Water Quality Control Board region | CWA Section 401 Water Quality Certification or Waste Discharge Requirements for Discharge of Dredge and/or Fill Material to Waters of the State | Certifies that projects are consistent with Section 401 of the Clean Water Act, if applicable and/or state water quality standards (Porter Cologne Water Quality Control Act) |
| **Local Agencies** | | |
| Mojave Desert Air Quality Management District (MDAQMD) | Dust Control Plan | For construction activity in Mojave Desert Planning Area (MDAQMD Rule 403.2) |

# CHAPTER 2

# Project and Alternatives

## 2.1 Introduction

This chapter describes the Applicant's proposal to construct, operate, maintain, and decommission the Crimson Solar Project. The Crimson Solar Project is proposed as a solar photovoltaic (PV) energy facility with the capacity to generate approximately 350-megawatt (MW) of electricity, an energy storage facility, and related infrastructure on Bureau of Land Management (BLM)-administered land in unincorporated Riverside County, California (Recurrent 2017). The proposal and requisite California Desert Conservation Area (CDCA) Plan Amendment (PA) collectively are referred to as "Alternative A" or "Proposed Action."[1]

This chapter also describes the process that the BLM and the California Department of Fish and Wildlife (CDFW) used to screen potential alternatives to the Applicant's proposal, and describes the alternatives carried forward for detailed analysis in this Final Environmental Impact Statement (EIS) and Proposed Land Use Plan Amendment to the California Desert Conservation Area Plan (PA).

## 2.2 Alternatives Development and Screening

Alternatives to the Applicant's proposal were screened for purposes of the National Environmental Policy Act (NEPA) (see BLM NEPA Handbook Section 6.6.3) and California Environmental Quality Act (CEQA) (14 Cal. Code Regs. Section 15126.6(a)) based on the criteria below. Based on that screening, the BLM and CDFW determined that Alternative B (Section 2.5) and Alternative C (Section 2.6) met all of the screening criteria and were carried forward for detailed analysis in Chapter 3. Alternative D (Section 2.7), the No Plan Amendment/ No Action/No Project Alternative also is analyzed in Chapter 3. Alternatives that did not meet the criteria are described in Section 2.10.

1. Does the alternative respond to the BLM's purpose and need (Section 1.2.1)?
2. Does it meet most of the basic objectives of the Project under CEQA (Section 1.2.2)?
3. Is its implementation technically or economically feasible?
4. Is it consistent with the basic policy objectives for the management of the area?
5. Is its implementation remote or speculative?
6. Is it substantially similar in design to an alternative that is analyzed?
7. Would it have substantially similar effects to an alternative that is analyzed?
8. Would it avoid or substantially lessen any significant effects of Alternative A?

## 2.3 Proposed Land Use Plan Amendment Decisions

As described in Section 1.3.4, the proposal qualifies as a pending application subject to processing under the CDCA Plan in place prior to the adoption of the DRECP LUPA and Western Solar Plan. The prior CDCA Plan provisions, while recognizing the potential compatibility of solar generation facilities on public lands, require that all sites associated with power generation or transmission not specifically identified in the CDCA Plan be

[1] Although this document refers to Alternative A or the Proposed Action as "the Project" for purposes of CEQA, use of this term does not in any way indicate the lead agencies' preference for Alternative A; it is merely the precise project proposed by the Applicant. As an informational document, an EIS does not recommend approval or denial of any specific alternative. This EIS will be used to inform decision makers and the public about the environmental consequences of each of the alternatives analyzed.

added to it through the land use plan amendment process. Therefore, if the BLM elects to approve the ROW grant for Alternative A, B, or C, a project-specific CDCA Plan amendment would be required to identify the site as suitable for the proposed type of solar energy use.

Additionally, the proposed gen-tie line would be sited outside the adjacent BLM Utility Corridor K and Section 368 Federal Energy Corridor 30-52 (referred to as Corridor K/30-52 in this Final EIS and Proposed PA) (AECOM 2018). Therefore, the gen-tie corridor also would require consideration through the CDCA Plan amendment process. If the BLM elects to approve the ROW grant for Alternative A, B, or C, a project-specific plan amendment would also be required to authorize the gen-tie corridor.

In summary, the draft plan amendments described in the Final EIS and Proposed PA are:

**PA1:** The CDCA Plan would be amended to identify the proposed development footprint as suitable for the proposed type of solar energy use.

**PA2:** The CDCA Plan would be amended to authorize the proposed gen-tie corridor.

Collectively, these are referred to as the CDCA Plan Amendment in this analysis. These two amendments must be adopted in order for the BLM to issue a ROW for any action alternative. If the no action alternative is selected, any subsequent applications filed for the site would be subject to the DRECP Land Use Plan Amendment (LUPA).

## 2.4 Alternative A: Proposed Action

Sonoran West Solar Holdings, LLC, a wholly owned subsidiary of Recurrent Energy, LLC (Applicant) proposes to construct, operate, maintain, and decommission the proposed solar project near the city of Blythe, California, as shown in Figure 2-1. The project would interconnect to the regional electrical grid at the existing Southern California Edison (SCE) Colorado River Substation (CRS) and would include up to 1,400 megawatt-hours (MWh) of integrated energy storage capacity. The Applicant has a large generator interconnection agreement (LGIA) for 350 MW with the California Independent System Operator (CAISO).

The Applicant submitted an application in 2009 requesting a ROW grant from the BLM, and provided technical information about the proposal in its May 2019 Plan of Development (POD) (Sonoran West Solar Holdings, LLC 2019). The information presented, including the identification of land disturbance area, equipment, schedule, mileage, and workforce, is based on the most current data available as of the publication of this Final EIS and Proposed PA and generally represents conservative estimates for the purposes of analyzing potential impacts. Specifics presented in this description of the proposal may be refined based on final engineering and various agencies' permit requirements.

### 2.4.1 Proposed Site Location and Existing Land Use

The proposed site consists of approximately 2,500 acres of BLM-administered land, approximately 13 miles west of the City of Blythe, California, and approximately 10 miles northwest of Palo Verde. The site is located immediately south of Interstate 10 (I-10) and approximately 9 miles west of State Route (SR) 78 (Figures 1-1 and 1-2). The site is located in a portion of Section 33 within Township 6 South, Range 20 East; portions of Sections 1, 2, 4, 11, 12, 13, 24, and 25 within Township 7 South, Range 20 East; and portions of Sections 6, 7, 8, 16, 17, and 18 within Township 7 South, Range 21 East, San Bernardino Meridian, California.

The proposed site is at the northern foot of the Mule Mountain Area of Critical Environmental Concern (ACEC) and at the eastern edge of the Chuckwalla Hydrologic Area. Approximately 16 miles west of the site is the Chuckwalla Mountains Wilderness area (see Figure 3.14-1). The site is within the Riverside East SEZ of the Western Solar Plan and within a DRECP Development Focus Area (DFA); however, as described above, the Applicant's proposal is not subject to the decisions contained within the Western Solar Plan or the DRECP LUPA. The site is surrounded by BLM-administered lands and some private parcels (see Figure 2-2). SCE high-voltage transmission lines (Devers Palo Verde 1 and 2) and the CRS are located directly north of the site.

## 2.4.2 Proposed Facilities

### 2.4.2.1 Photovoltaic Modules and Support Structures

The Proposed Action would involve the installation of solar PV modules mounted on either fixed-tilt or single-axis tracking structures, or a combination of the two types of mounting systems. The types of modules that may be installed include thin-film modules (including cadmium telluride [CdTe] and copper indium gallium diselenide [CIGS] technologies), crystalline silicon modules, or any other commercially available PV technology. Multiple types of modules and racking systems may be installed, depending on the terms and conditions of the ROW grant or lease. The PV modules would be manufactured at an off-site location and transported to the site. Module faces would be minimally reflective, dark in color, and highly absorptive.

Modules would be arranged on the site in arrays consisting of multiple rows. For single-axis tracking systems, the length of each row would be approximately 350 feet along the north-south axis. For fixed-tilt systems, a row consists of multiple tables (4 modules high by 10 modules wide, depending on design), each table approximately 65 feet along the east-west axis, with 1-foot spacing between each table. Spacing between each row would be a minimum of 4 feet. Although the final module block increment sizes ultimately would depend on available technology and market conditions, this Final EIS and Proposed PA assume that the Proposed Action would be designed and laid out primarily in 2 MW increments. Nonconforming module blocks would be designed and sized as appropriate to accommodate the irregular shape of the solar plant site footprint. If larger 3 to 4 MW array blocks are used, slightly fewer roads would be compacted and graded and the exact locations of the roads may differ.

Structures supporting the PV modules would consist of steel piles (e.g., cylindrical pipes, H beams, or similar), which would be driven into the soil using pneumatic techniques, such as a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically would be spaced 10 feet apart. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 feet above grade, while for a fixed-tilt system the reveal height would vary based on the racking configuration specified in the final design. Fixed-tilt arrays would be oriented along an east-west axis with modules facing generally south. Tracking arrays would be oriented along a north-south axis with modules tracking east to west to follow the movement of the sun. The total height of the module system measured from the ground surface would be up to 12 feet, and piles would be driven 12 feet below the ground surface. For fixed-tilt systems, the modules would be fixed at a 20- to 60-degree angle or as otherwise determined necessary during final design.

The vegetation treatment in the module field would consist of mechanically mowing the vegetation, rolling the mowed areas, and occasional grubbing of individual plants that may interfere with installation of specific components. About 5 percent of the module field acreage would be cut and filled (mass grading) to level the ground surface. Cuts and fills are expected to be balanced so that neither imported borrow material nor excess excavation spoils would result. These mass grading areas would be entirely cleared of vegetation and grubbed.

The Proposed Action would include a meteorological data collection system consisting of up to 17 meteorological stations located at each inverter. Each station would incorporate a sensor package and a vertical mast; the mast would be up to 20 feet tall depending on the topography.

### 2.4.2.2 Inverters, Transformers, and Electrical Collection System

Each 2 MW increment would include an inverter-transformer station constructed on a concrete pad or steel skid in an inverter equipment area measuring approximately 40 feet by 25 feet, and centrally located within the PV arrays. Each inverter-transformer station would contain up to four inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high. If required based on site meteorological conditions, an inverter shade structure consisting of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar) would be installed at each pad and would extend up to 12 feet above the top of the inverter pad.

Modules in each row would be electrically connected by wiring secured to the racking system. Underground cables would convey the direct current (DC) electricity from the modules via combiner boxes located throughout the PV arrays to inverters to convert the DC to alternating current (AC). The output voltage of the inverters would be stepped up to the collection system voltage (34.5 kV) via transformers located near the inverters. The collection cables would be buried underground or installed overhead on wood poles depending on the voltage. While some of these wood poles could be located toward the perimeter of the solar plant site boundary, the majority would be located within the interior of the site. Between 300 and 500 wood poles located at approximately 250-foot intervals would be installed across the site. The poles would be 30 to 50 feet tall, measured from the ground surface to the top of the collection pole, with diameters of 12 to 14 inches. The total length of the collection lines would be approximately 9 miles.

### 2.4.2.3 Proposed Substations and Gen-tie Line

Up to four substations would collect consolidated intermediate voltage cables from the PV collector system and transform the collection voltage from 34.5 kV to a transmission voltage of 220 kV. Each substation and associated equipment would have a footprint of approximately 150 feet by 200 feet and would be located near the CRS as shown in Figure 2-1.

To connect the proposed substations to the CRS, each substation area would include:

- Power transformers (approximately 25 feet by 40 feet, and 25 feet tall, with footings);
- Shared switchyard
- Prefabricated control buildings (each approximately 23 feet by 15 feet, and 12 feet tall) to enclose the protection and control equipment, including relays and low voltage switchgear, with footings up to 12 feet deep;
- Metering stand;
- Capacitor bank(s);
- Circuit breakers and air disconnect switches;
- One microwave tower adjacent to the control building comprising a monopole structure up to 100 feet tall mounted with an antenna up to 5 feet in diameter; and
- Dead-end structure(s) up to 80 feet tall.

The substation area would be graded and compacted to an approximately level grade. Cast-in-place concrete foundations would be constructed for the substation equipment, and the remaining area would be graveled to a maximum depth of approximately 6 inches. Because each of the substation transformers would contain mineral oil, the substations would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting. Each substation would be surrounded by a chain-link fence up to 8 feet high topped with 1 foot of barbed wire (composed of three strands of wire). Each of the dead-end structures would require foundations excavated to a depth of 20 feet or more.

The proposed gen-tie would be up to 6,000 feet long and would be constructed with either monopoles, lattice steel structures, or wooden H-frame poles, for a total of up to 15 support structures. The 300-foot-wide corridor would comprise up to 33 acres outside of the Project fenceline. Up to 800 feet of the gen-tie line may be constructed either above or below ground to cross Powerline Road and existing SCE transmission lines. For the overhead gen-tie line, structure foundations would be excavated to a depth of 20 feet or more and include concrete supports. Gen-tie structures would be up to 150 feet tall. The gen-tie line would consist of a three-phase 220 kV conductor strung along both sides of the gen-tie line, if needed, and would be equipped with a ground wire and a telecommunications fiber optic cable. The shared switchyard contains the actual switches and breakers that can be tripped to disconnect the facility from the power grid and would be necessary for the multiple step-up transformers and storage system.

### 2.4.2.4 Operation and Maintenance Building

An operation and maintenance (O&M) building would be located near one of the proposed substations. The O&M building would be approximately 2,000 square feet in size (approximately 40 feet by 50 feet, and 15 feet high at its tallest point), which would accommodate operation and maintenance staff. Two equipment storage containers each measuring 40 feet by 8 feet, and 9 feet high also would be located at the substation area. The O&M building would be constructed on a concrete foundation. An enclosed water tank for fire suppression may also be located in the area by the O&M building.

### 2.4.2.5 Supervisory Control and Data Acquisition System

The facility would be designed with a comprehensive supervisory control and data acquisition (SCADA) system to allow remote monitoring of facility operation and/or remote control of critical components. The fiber optic or other cabling required for the monitoring system would be installed in buried conduit, leading to a series of SCADA system cabinets located within the O&M building. Each cabinet would be approximately 20 feet by 8 feet, and 9 feet high. External telecommunications connections to the SCADA system cabinets could be provided through wireless or hard-wired connections to locally available commercial service providers by interconnecting to the fiber optic network at the CRS. No additional disturbance associated with the proposed telecommunications system is anticipated.

### 2.4.2.6 Energy Storage System

The proposed energy storage system would be capable of storing up to 1,400 MWh of electricity. If provided, the energy storage system would consist of battery or flywheel banks housed in metal enclosures or on prefabricated skids, and buried electrical conduit to a collection system. The Applicant could use any commercially available battery technology, including but not limited to, lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride or mechanical fly wheels. A battery energy storage system would rely on banks of high-capacity batteries stored in a temperature-controlled environment. A flywheel energy storage system would store kinetic energy using banks of rotors that are spun continuously in a low-friction environment. Battery systems are operationally silent, but the cooling systems have a noise rating of less than 70 A-weighted decibels (dBA) outside their enclosures, and flywheel systems have a noise rating of 45 dBA outside their enclosures.

The energy storage system would be concentrated in one location on the site and connected to the PV array via an "AC-coupled" system. The energy storage system would be located at the northern end of the site near the site access gate and proposed substations (see Figure 2-3, Substation Detail).

### 2.4.2.7 Access Roads

Access to the proposed site would be provided from I-10 along the existing paved Wiley's Well and Powerline roads to the CRS. The Proposed Action's on-site roadway system, depicted in Figure 2-1, would include a perimeter road approximate 12 feet on both sides of the fencing around each solar array field, as well as access roads and internal roads. The perimeter road and main access roads would be approximately 20 to 30 feet wide and constructed to be consistent with facility maintenance requirements and BLM fire standards. The road would provide a fire buffer, accommodate proposed O&M activities such as solar module cleaning, and allow on-site circulation for emergency vehicles. Additionally, where possible, Arizona crossings would be used to maximize avoidance and minimize impacts on washes. Fenceline roads would be compacted native material.

Internal roads would have permeable surfaces and would be approximately 12 to 20 feet in width or as otherwise required by BLM fire standards. They would be treated to create a durable, dustless surface for use during construction and operation, likely involving surfacing with gravel, compacted native soil, or a dust palliative such as ChlorTex Road Binder, Eccotext Soil Binder, or PlasTex Soil Stabilizer or similar product (not lime treatment). Any dust palliative would require approval from the BLM Authorized Officer prior to application.

There would be five sections of new access roads, consisting of one new access road from Power Line Road and four wash crossings that connect the proposed solar array fields. The four wash crossings would be low-water crossings armored with rip-rap, rip-rap with some cementing, or concrete.

#### 2.4.2.8 Solar Facility Site Safety and Security

Site ingress/egress would be accessed via locked gates located at multiple points around the solar plant site perimeter. Each unit would have at least one point of access. The boundary around each unit would be secured by an 8-foot-high chain-link perimeter fence, topped with 1 foot of three-strand barbed wire. The security fence would be collocated with a permanent desert tortoise exclusion fence installed per U.S. Fish and Wildlife Service protocol. Motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation areas, each inverter cluster, at gates, and along perimeter fencing, where appropriate. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.

Off-site security personnel could be dispatched during nighttime hours or could be on-site, depending on security risks and operating needs. Infrared security cameras, motion detectors, and/or other similar technology could be installed to allow for monitoring of the site through review of live footage 24 hours a day, 7 days a week. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high. Each pole would require a few feet of excavation but would not require a concrete footer or a pad. The location of poles would be determined at a more advanced stage of design.

### 2.4.3 Construction

#### 2.4.3.1 Preconstruction Activities

For geotechnical and hazards investigations, environmental monitors would ensure that off-road driving speeds would be limited to 10 mph and vehicles and equipment would be accompanied by environmental monitors to facilitate the avoidance of impacts to special-status species and cultural and paleontological resources, as well as to avoid hazards that may be present on the site.

##### *Geotechnical Investigation*

Prior to construction, the Applicant would conduct a geotechnical investigation using subsurface scientific testing and analysis. The geotechnical fieldwork would include survey work, field exploration borings and soil sampling, and pile testing to verify the design and construction methods for proposed piles. Survey equipment used would be hand-held. Wooden stakes would be driven into the ground using hand tools, and colored flags would be used to denote work areas. Currently, 55 borings are proposed to test site soils; however, the locations and number may be refined following reconnaissance of the site, final design details, and environmental resource constraints identified during field surveys and monitoring. Pile testing would consist of pile driving, testing, and pile removal, which would be conducted using a pile-driving rig, a loader (either backhoe or bobcat), and a pickup truck. The operation would include three employees working as operators, and up to two additional staff associated with the testing. The geotechnical fieldwork is anticipated to occur between 7 a.m. and 5 p.m., 6 days per week, over a total of 4 weeks.

##### *Hazards Investigation*

Described further in Section 3.5, Cultural, Tribal, and Historic Resources, the Desert Training Center (DTC) facility, which extended from Desert Center in California to the Colorado River, left ordnance on portions of the Project vicinity that could result in hazardous conditions. The hazards investigation would use ground-penetrating radar or visual survey sampling to identify potential unexploded ordnance (UXO) and Munitions and Explosives of Concern (MEC) that may need to be stabilized or removed. Two methods of UXO detection could be used: aerial drone or truck-mounted radar. A drone-mounted magnetometer could be used to survey large areas of the site without causing ground disturbance. An up to 10-mile transect would be evaluated with a truck-mounted ground-penetrating radar, which is a passive, non-invasive method of evaluating subsurface conditions.

Two steel equipment storage containers and a temporary office trailer would be set up just south of the CRS in an area that has been previously disturbed by vehicle and equipment traffic and lacks native vegetation. An explosives storage magazine (4-foot-square metal lock box) would be within one of the equipment storage containers. For truck-mounted sensors, an instrument verification strip would be set up near the office trailer; this would consist of a 0.5-acre area approved by the environmental monitors where buried UXO detection equipment would be installed up to 18 inches below the ground surface using hand shovels. The instrument verification strip would be used to calibrate equipment on a daily basis, and equipment would drive across the test strip for daily calibration.

Investigations of identified anomalies would be performed by field technicians by excavating with a hand shovel or a mini-excavator (only as required and in locations approved by the environmental monitors) to depths up to approximately 4 feet below ground surface. Up to 2,000 anomalies could be investigated. If anomalies prove to be UXO/MEC, they would be inspected by the UXO technician and evaluated by the on-site cultural monitor and recorded as necessary. If anomalies prove to be live or hazardous, they would be detonated by qualified UXO/MEC technicians and placed in the explosives storage magazine. The hazard investigation field work is anticipated to occur between 7 a.m. and 5 p.m., 6 days per week, over a total of 8 weeks.

#### *Preconstruction Surveys and Construction Crew Training*

Prior to construction, all contractors, subcontractors, and other on-site personnel would receive Worker Environmental Awareness Program (WEAP) training regarding the appropriate work practices necessary to effectively understand and implement the biological commitments in the project description, implement the mitigation measures, comply with applicable environmental laws and regulations, avoid and minimize impacts, and understand the importance of these resources and the purpose and necessity of protecting them. The following species and their habitat would be specifically covered in the WEAP: desert tortoise, Mojave fringe-toed lizard, Couch's spadefoot toad, burrowing owl, golden eagle, other raptors and migratory birds, American badger, and desert kit fox. Applicable sensitive plant species would also be covered in the WEAP. The proposed WEAP training would be required before a worker would be allowed to work on the site. These trainings would occur on a continuous basis during construction.

Qualified biologists would conduct pre-construction surveys for sensitive species. Sensitive resource areas would be flagged so they are avoided or appropriately managed during construction. Pre-construction field survey work would include identifying precise locations of the site boundary, desert tortoise and security fence, and gen-tie ROW boundary. A staging area would be established for storing materials, construction equipment, and vehicles. These features would be subsequently staked in the field. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction limits. All off-road vehicle travel, fence installation, and staging area establishment would be surveyed and/or monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate. The pre-construction field surveys would be conducted during daylight hours, and vary in length and timing, depending on the species found on-site. Typically, desert tortoise surveys take the longest to conduct, as an area needs to be fenced and three surveys completed where no sign of the species is found. This can take weeks depending on the size of the area and tortoise density.

### 2.4.3.2 Site Preparation (Construction Phase 1)

Across flatter areas of the site, a mow-and-roll technique would be used to remove surface vegetation and keep root balls in place; vegetation would be mowed to within 6 inches of the ground surface with any stumps worked over with a roller. Rolling can be accomplished by normal vehicle traffic, drum roller, or a sheepsfoot or padfoot roller. Grubbing can be achieved with a tractor, backhoe, or disker. Across a majority of the site, grubbing and grading would be required to level rough or undulating areas of the site and to prepare soils for concrete foundations for substation equipment, inverters, energy storage systems, and O&M building. Grubbing would involve the removal of vegetation from the construction site, while grading would include earthwork to achieve a certain base or slope. Access road beds would also be grubbed, graded, and compacted. The site cut and fill would be approximately balanced; minimal import/export would be necessary.

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

### 2.4.3.3 Photovoltaic Module System (Construction Phase 2)

The steel piles supporting the PV module arrays would be driven into the soil using a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator or with tracked-vehicle-mounted post drivers. For single-axis tracking systems, following pile installation the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV modules to be secured directly to the torque tubes using appropriate module clamps. For some single-axis tracking systems and for all fixed-tilt systems, a galvanized metal racking system, which secures the PV modules to the installed foundations, would then be field-assembled and attached according to the manufacturer's guidelines.

### 2.4.3.4 Inverters, Transformers, Energy Storage Systems, Substation, and Electrical Collector System (Construction Phase 3)

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

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

The substation areas would be excavated for the transformer equipment, control building foundation, and oil containment area. The oil containment within the substation areas would be used for potential spills of mineral oil. The area for the substations would be graded and compacted to an approximately level grade. Concrete slab foundations would be constructed for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought on-site from a batching plant in Blythe or would be batched on-site. Concrete pads, foundations, and vaults may include both pre-cast and cast-in-place construction methods.

Where excavations are required, the majority of proposed construction activities (i.e., substation infrastructure and foundations, inverter foundations, and building foundations) would be limited to less than 6 feet in depth; however, some excavations, such as those undertaken for cabling from arrays to combiner boxes and to inverters may reach depths of up to 10 feet. Installation of collector poles and dead-end structures may reach depths of up to 20 feet.

Alternating Current (AC) and Direct Current (DC) collector poles would be installed using an auger truck to drill the holes, forklifts to transport the poles, and a small skid steer to move the spoils. For each collector pole, a hole would be drilled using the auger, the pole would be moved into position, and then the excavation would be backfilled with the spoils. A bucket truck would be used to install guy wires, as needed, to support the pole. The guy wires would be attached to a structure and anchored to the ground.

For skid mounted electrical inverters and transformers, each inverter and transformer would be delivered to the site on a skid. The inverter and transformer skids would be supported on driven piles; the quantity would be determined by the structural engineer based on the design of the skid. All DC, medium-voltage communication wiring could then be routed from the overhead poles through the void between the bottom of the skid and the ground. All medium-voltage cables exiting the inverters would be carried via wooden utility poles.

Construction of the energy storage system would include site preparation; installation of the foundations, structures, and systems; and installation of the electrical connections. If the energy storage system is DC-coupled, the equipment would be co-located at the inverter and transformer equipment areas within the individual array blocks throughout the site. Site preparation would likely occur during installation of the inverter and transformer equipment areas. The energy storage system equipment or enclosure would be located on a concrete foundation or skid measuring approximately 10 feet by 45 feet. For an AC-coupled system, the energy storage equipment or enclosures would be concentrated in a single location with multiple units on individual foundations or skids. The site would be cleared and graded prior to installation.

The energy storage system would be largely assembled off-site and delivered to the site for final installation. Heavy trucks and other equipment would be used to deliver and install the infrastructure and battery or flywheel enclosures. After a system is installed, it would be tested and commissioned. The energy storage system may be installed during installation of the PV arrays, or it could be installed later while the facility is in operation.

### 2.4.3.5 Schedule, Work Force, and Equipment

#### *Schedule*

Construction is anticipated to occur over an approximately 2-year period. Pre-construction activities would tentatively commence in the second or third quarter of 2021 with desert tortoise clearance surveys. Construction activities would commence after the completion of the tortoise clearance surveys and would be expected to be complete by December of 2023.

Preliminary construction phasing would be as follows:

- Pre-construction activities, including resource and clearance surveys, desert tortoise fence installation, geotechnical work, and UXO investigation: approximately 2 months
- Phase 1, site preparation (construction move-on, grading): approximately 19 months
- Phase 2, solar array structural components (structural components, underground work, module installation: approximately 19 months
- Phase 3, installation of inverters, substations, energy storage systems, gen-tie connection, O&M building: approximately 18 months

Phases 1 through 3 would mostly occur concurrently, with Phase 2 starting 4 months after Phase 1 started, and Phase 3 starting 5 months after Phase 1 started. Construction generally would occur between 7 a.m. and 7 p.m., Monday through Friday. Weekend construction work is not expected but may occur on occasion to maintain the schedule. Some work may occur outside these hours to address emergent urgent situations, avoid adverse weather conditions (including high summer temperatures), or to perform work on active arrays after sunset.

#### *Work Force*

The estimated construction workforce for pre-construction and subsequent phases are shown in Table 2-1 (numbers account for overlapping phases as described above). The construction work force would peak at up to 427 directly employed workers during the height of construction (Phase 2). Employees would drive to the site and park at the construction move-on area in the vicinity of the proposed substation.

**TABLE 2-1**
**CONSTRUCTION PHASE**

| | Pre-Construction | Phase 1 | Phase 2 | Phase 3 |
|---|---|---|---|---|
| **Solar Facility** | | | | |
| Average Number of Workers | 70 | 251 | 320 | 102 |
| Maximum Number of Workers | 70 | 334 | 427 | 180 |
| Length of Phase (work days) | 60 | 399 | 399 | 378 |

### *Equipment*

Standard construction equipment would be used during construction, including earth-moving equipment (e.g., bulldozers, excavators, and backhoes) and road-building equipment (e.g., compactors, scrapers, and graders). Construction equipment would include air compressors, all-terrain passenger vehicles, backhoes, cranes, a drill rig, forklifts, flat-bed trucks, a front-end loader, pickup trucks, a pile driver, a trencher, and water trucks. A staging area would be established for storing materials, construction equipment, and vehicles. The staging area would be surveyed and monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

All construction materials would be delivered by truck. The majority of truck traffic would occur on designated truck routes and major streets. Flatbed trailers and trucks would be used to transport construction equipment and construction materials to the site. Project components would be assembled on-site. Materials deliveries during construction would travel up to 150 miles one way from their source to the site.

Table 2-2 lists the anticipated equipment for each construction phase. With the exception of pickup trucks, all equipment is assumed to be diesel-powered. Table 2-3 lists the anticipated construction truck trips.

**TABLE 2-2**
**CONSTRUCTION EQUIPMENT**

| Equipment Description | Number of Units | Total Work Days Per Unit | Daily Hours of Operation Per Unit |
|---|---|---|---|
| **Site Preparation (Phase 1)** | | | |
| Water Truck | 2 | 379 | 8 |
| Water Pull | 2 | 379 | 8 |
| Motor Grader | 3 | 150 | 6 |
| Dozer (D6) | 1 | 150 | 6 |
| Loader | 2 | 150 | 6 |
| Skid Steer | 3 | 150 | 6 |
| Tractor Buster | 2 | 150 | 6 |
| Tractor Disk | 2 | 150 | 6 |
| Truck (on-road) | 10 | 379 | 4 |
| Generator (Office) (45 kW) | 1 | 379 | 24 |
| Generator (Security, IT) (30 kW) | 1 | 379 | 24 |
| Roller/Vibrator/Padder | 1 | 100 | 6 |
| Scraper | 3 | 150 | 6 |
| Water Pump | 2 | 379 | 8 |
| **Solar Array Structural Components (Phase 2)** | | | |
| Water truck | 8 | 379 | 8 |
| ATV | 40 | 379 | 4 |

**TABLE 2-2 (CONTINUED)**
**CONSTRUCTION EQUIPMENT**

| Equipment Description | Number of Units | Total Work Days Per Unit | Daily Hours of Operation Per Unit |
|---|---|---|---|
| **Solar Array Structural Components (Phase 2) (cont.)** | | | |
| Air Compressor | 2 | 340 | 6 |
| Crane | 2 | 130 | 2 |
| Forklift (5 K) | 10 | 340 | 4 |
| Forklift (10 K) (Aerial Lift) | 10 | 340 | 4 |
| Post Machine | 14 | 340 | 6 |
| Skid Steer | 20 | 340 | 4 |
| Truck, flatbed (on-road) | 4 | 340 | 4 |
| Truck (on-road) | 30 | 379 | 4 |
| Generator (45 kW) | 1 | 379 | 24 |
| Backhoe/Excavator | 4 | 130 | 4 |
| Cable Plow | 1 | 110 | 6 |
| Cable Trencher | 1 | 110 | 6 |
| Compactor | 1 | 120 | 4 |
| Roller/Vibrator/Padder | 2 | 120 | 6 |
| Mini-Trencher | 4 | 110 | 6 |
| Sheepsfoot/Padfoot Roller | 3 | 100 | 6 |
| 5 CY Dump Truck | 1 | 100 | 4 |
| **Installation of Inverters, Substation, Energy Storage and Gen-tie Connection (Phase 3)** | | | |
| Water truck | 8 | 355 | 4 |
| Auger | 4 | 319 | 5 |
| Backhoe/Excavator | 4 | 319 | 6 |
| Crane | 5 | 319 | 6 |
| Forklift | 4 | 319 | 3 |
| Mini Excavator | 6 | 319 | 1 |
| Man/Aerial Lift | 4 | 319 | 2 |
| Tractor | 6 | 319 | 1 |
| Truck, flatbed (on-road) | 2 | 355 | 2 |
| Truck (on-road) | 2 | 355 | 13 |
| Generator (45 kW) | 4 | 355 | 2 |
| Crawler Tractor | 4 | 125 | 1 |
| Truck Mounted Digger | 4 | 125 | 1 |
| Tensioner | 4 | 125 | 1 |
| Wire Truck | 4 | 125 | 1 |
| Motor Grader | 1 | 125 | 1 |
| Scraper | 1 | 125 | 1 |
| Cable Trencher | 10 | 125 | 5 |

**TABLE 2-3**
**CONSTRUCTION TRUCK TRIPS**

| Delivery Type | Number of Trucks | Construction Phase | Distribution |
|---|---|---|---|
| Modules | 1,614 | Between Phase 1 and Phase 2 | 10 Trucks Per Day |
| Foundations | 1,957 | Between Phase 1 and Phase 2 | 10 Trucks Per Day |
| Trackers | 1,867 | Phase 2 | 9 Trucks Per Day |
| Inverters | 145 | Between Phase 2 and Phase 3 | 2 Trucks Per Day |
| Water (10,000-gallon) | 32,585 | All | 52 Trucks Per Day (max) |

### 2.4.3.6 Water Requirements and Waste Generation

Construction water would be suppled from Palo Verde Irrigation District, and/or from new wells located on the solar plant site, an off-site well located approximately 4 miles northeast of the site in the Palo Verde Mesa Groundwater Basin (PVMGB), or a combination of these sources. It is anticipated that up to 1,000 acre-feet would be used for dust suppression and other purposes during the 24-month construction phase. Temporary restroom facilities would be provided by portable units to be serviced by licensed providers.

Construction sites would be kept in an orderly condition throughout the construction period using approved enclosed refuse containers. All refuse and trash would be removed from the site and disposed of in accordance with BLM and other applicable regulations. No burning of construction trash would occur.

Construction would involve the use of hazardous materials such as fuels for construction equipment. Such substances may be stored in temporary aboveground storage tanks, in sheds located on the site, or in a locked container within a fenced and secure temporary staging area. Safety Data Sheets for all applicable materials present would be kept on-site and readily available to on-site personnel. Passenger trucks and construction vehicles would be serviced at off-site facilities. The use, storage, transport, and disposal of hazardous materials would be carried out in accordance with federal, state, and county regulations.

Waste and excess construction materials would be sorted on-site and transported to appropriate waste management and/or designated recycling facilities. It is anticipated that at least 20 percent of construction waste would be recyclable, and 50 percent of those materials would be recycled. Wooden construction waste (such as wood from pallets) would be sold, recycled, or chipped and composted off site. Other compostable materials, such as vegetative waste, might also be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would be disposed of at county landfills. Hazardous waste and electrical waste would be transported to a hazardous waste handling facility (e.g., electronic waste recycling). All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste.

### 2.4.3.7 Post-Construction Site Stabilization, Cleanup, and Restoration

Following the completion of major construction, areas of temporary disturbance outside the solar arrays would be revegetated pursuant to an approved Restoration Plan for site stabilization. Where necessary, native re-seeding or vertical mulching techniques would be used.

All vegetation that may interfere with operation of equipment (e.g., invasive and noxious weeds that could create a fire hazard) would be trimmed and removed using manual non-mechanical means or sprayed with an approved herbicide as necessary within the solar plant site boundary. Manual means of vegetation management would be limited to the use of hand-operated power tools and hand tools to cut, clear, or prune herbaceous and woody species. Hand-operated tools such as hoes, shovels, and hand saws could be used under the Weed Management Plan (see Appendix I-10), as well as hand-pulling of plants. Mechanical control activities, such as chaining, disking, grubbing, and mowing using tractors or other heavy equipment may also be used as necessary. All weed control using herbicides and adjuvants would be conducted in compliance with California BLM-approved chemicals (including manufacturer application rates and use) as identified in the Record of

Decision for BLM's 2007 Vegetation Treatment PEIS, as updated in Information Bulletin No. 2014-069, and in the Record of Decision for BLM's 2016 PEIS for Vegetation Treatments Management Using Aminopyralid, Fluroxypyr, and Rimsulfuron (BLM 2007, 2014, 2016). The Applicant would be required to prepare and submit to the BLM for approval a Weed Management Plan and Pesticide Use Plan prior to using any herbicides at the site.

### 2.4.4 Operation and Maintenance

The solar modules at the site would operate during daylight, 7 days a week, 365 days a year. Routine operational and maintenance activities would include solar module repairs and washing; maintenance of support structures, transformers, inverters, energy storage systems, electrical collection systems, gen-tie lines and other electrical equipment as needed; road and fence repairs and maintenance; drainage control structure repairs and maintenance, vegetation, weed, and pest management performed in accordance with an approved Weed Management Plan and Pesticide Use Plan; security; responding to automated electronic alerts based on monitored data; and communicating with customers, transmission system operators, and other entities involved in facility operations.

Most site maintenance would be conducted during the day. Equipment repairs could take place in the early morning or evening when the plant would be producing the least amount of energy.

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

The maximum number of staff on-site at any time would be 50 (40 temporary staff and 10 permanent staff). Up to 10 permanent staff could be on the site at any one time for ongoing facility maintenance and repairs. Scheduled maintenance activities would vary in accordance with the required task, but could involve up to 40 workers full-time for up to 2 weeks at a time for module washing, and a similar number and duration for workers regularly visiting the site for routine maintenance activities. A BLM-approved qualified biological resources monitor would accompany any ground disturbing activities in the vicinity of sensitive biological resources required during operations and maintenance.

Approximately 7.3 million gallons of water (22 acre-feet) would be used annually, principally to wash modules and also for other uses such as substation restrooms. This water would not need to be treated to potable standards and would be supplied from either new wells located on the solar plant site, an off-site well located approximately 4 miles northeast of the site, or a combination of these sources. Any water supplied by an off-site source would be trucked to the site. Potable water would be imported for staff consumption.

Restrooms would consist of one or two above-ground, self-contained portable restrooms with built-in holding tanks, and would remain on-site for the duration of the project. Each facility would have a 2,000-gallon capacity. These facilities would be installed in accordance with state requirements and emptied as needed by a contracted sanitary wastewater service vehicle. Water from washing modules would be absorbed into the surrounding soil or would evaporate; therefore, it would not be directed to a wastewater system or require treatment.

### 2.4.5 Decommissioning

The Proposed Action is anticipated to operate for a 30-year service life. At the end of this time, the Project would cease operation or, alternatively, be renewed pursuant to the terms of the ROW grant for continued use as a solar/energy facility or another use consistent with the applicable statutes and regulations at the time. In the event the Project ceases operation, the facilities would be decommissioned and dismantled and the site restored to the original conditions described in the environmental setting. It is estimated that decommissioning activities would require 10,000 truck trips and a workforce of 320 workers, and would take 17 months to complete. Upon decommissioning, the site could be converted to other uses in accordance with applicable land use regulations in effect at that time.

Above-ground structures and equipment and any underground equipment would be removed, including: module posts and support structures; gen-tie poles that are not shared with third parties; the overhead collection system within the solar plant site; inverters, transformers, electrical wiring, equipment on the inverter pads, and related equipment and concrete pads; and any O&M facilities and related equipment and infrastructure. The substation would be removed unless otherwise arranged in accordance with permits, agreements, and ROW grant, e.g., if another entity were to assume ownership of the substation.

Equipment would be de-energized prior to removal, and then shipped off-site by truck in secure transport enclosures as necessary to be salvaged, recycled, or disposed of at an appropriately licensed disposal facility. Solar PV modules also could be refurbished to extend their estimated 30-year lifespan and transported to another solar electrical generating facility. Removal of the solar modules would include disassembly and removal of the racks and the structures supporting the racks. The demolition debris and removed equipment may be cut or dismantled into pieces to be safely lifted or carried by the equipment being used. The fence and gates would be removed and all materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition unless otherwise stipulated by the BLM. The area would be thoroughly cleaned and all debris removed.

The BLM will determine whether and to what extent financial bonds are needed to ensure implementation of the restoration requirements when and if the Project or an alternative is approved. In accordance with 43 CFR 2804.20, the BLM requires performance and reclamation bonds to cover any losses, damages, or injury to human health, the environment, or property in connection with the use and occupancy of the right-of-way. The BLM would require the Applicant/Project Owner to develop a Decommissioning Plan, which will include revegetation and reclamation activities, and obtain BLM approval of the plan prior to issuance of a ROW grant (a draft Decommissioning and Reclamation Plan is provided as Appendix I.4). Based on the approved Decommissioning Plan, the BLM would require the Applicant/Project Owner to prepare a reclamation cost estimate, which will summarize the costs of reclaiming public lands. The bond amount would be based on the activities identified in the decommissioning plan and reclamation cost estimate.

## 2.5 Alternative B: Alternative Design

Alternative B is the same as Alternative A except as described in this section. Unlike Alternative A, which would involve construction practices such as mowing and rolling vegetation, grading the solar plant site, and trenching for underground cable installation, Alternative B would minimize grading, trenching, and vegetation removal during construction. Alternative B is defined by implementation of three Design Elements (DE) that differ from Alternative A:

**DE-1:** Minimizing grading during site preparation and maintaining more on-site vegetation by not mass mowing and rolling vegetation, as applicable, to facilitate post-construction residual habitat value and post-operations/site reclamation success

**DE-2:** Avoiding or limiting trenching by placing electrical wiring aboveground

**DE-3:** Slightly reduce grading in the vicinity of each array transformer, inverter, and energy storage systems on elevated support structures

### 2.5.1 Proposed Facilities

Alternative B would have less overall grading than Alternative A. Under DE-1, the site preparation techniques would consist of mechanically trimming vegetation to 18 inches high in the solar array field. Like Alternative A, mass grading would be needed for 5 percent of the module field acreage due to topography. Cuts and fills are expected to be balanced so that neither imported borrow material nor excess excavation spoils would result. These mass grading areas would be entirely cleared of vegetation and grubbed.

Under DE-2, overhead cables would be installed to convey the DC electricity from each row of modules to the inverters/transformers. Panel-to-panel wiring would run along the underside of the modules and would be attached to the table that holds the modules in place. Up to 500 DC and up to 500 AC wooden transmission poles would be required. Although the AC and DC cables would be collocated where feasible, a total of up to 1,000 wood poles may be required. The typical height of the poles would be approximately 30 to 50 feet, with diameters varying from 12 to 14 inches.

Also under DE-2, the SCADA system would be similar to that under Alternative A, except the fiber optic or other cabling required to the SCADA system cabinet would not be installed in buried conduit. Instead, it would be installed aboveground on the poles described above where possible and/or within aboveground conduit or cable trays. To minimize shade impacts on the solar panels, the cabling is anticipated to run along the north side of the panels, and thus longer overhead cabling would be required than for an underground design option.

Under DE-3, each inverter/transformer equipment area would measure roughly 40 feet by 25 feet as described in Alternative A, and would be mounted on steel skids and installed on steel piers above the ground surface. Each inverter/transformer station would contain up to four inverters, a transformer, and a switchboard 8 to 11 feet high. No grading would be needed for inverter/transformer pads, but vegetation at inverter/transformer stations would be trimmed to 6 inches in height using hand techniques or hand-held equipment.

## 2.5.2 Construction

Incorporation of the Design Elements under Alternative B is not expected to materially alter the construction schedule or workforce.

### 2.5.2.1 Site Preparation (Construction Phase 1)

Under DE-1, natural watercourses would be maintained to the extent practicable across the site except along main access roadways, and at the substation location, which would be graded, grubbed, recontoured, compacted, and graveled. Otherwise, only minimal vegetation trimming would be conducted using mechanical mowing techniques, and only vegetation taller than 18 inches would be trimmed.

### 2.5.2.2 Photovoltaic Module System (Construction Phase 2)

Under DE-1, steel piles would be individually sized to allow for a uniform elevation of module rows; therefore, the duration of pile installation may be longer than under Alternative A. Piles would be installed with a track-mounted pile driver. Typical pile drivers are configured with two 12- to 18-inch-wide tracks with a 4-foot space between the tracks. Pile drivers would make as few passes over existing vegetation as possible, but would crush existing vegetation on up to roughly 50 percent of the site acreage.

### 2.5.2.3 Inverters, Transformers, Substation, and Electrical Collector System (Construction Phase 3)

Under DE-2, trenching would not occur for cabling. DC and AC collector poles would be installed using an auger truck to drill the holes, forklifts to transport the poles, and a small skid steer to move the spoils. For each collector pole, a hole would be drilled, the pole would be moved into position, and then the excavation would be backfilled with the spoils. Guy wires would be installed, as needed, to support the pole. There would be a single pass of wheeled (not tracked) vehicles using overland travel (vegetation would be crushed but not trimmed, and soil would be compacted but not removed) to transport the equipment between pole locations. This vegetation disturbance is in addition to the 50 percent disturbance of the site acreage described under Section 2.5.2.2.

Under DE-3, grading/compaction would not occur for inverter/transformer stations. All electrical inverters and the transformer would be placed on a skid that would be delivered to the site. The quantity of driven piles needed for the foundation of each inverter and transformer pad would be determined by the structural engineer based on the design of the skid. All DC, medium-voltage communication wiring would then be routed from the overhead poles through the space between the bottom of the skid and the ground.

#### 2.5.2.4 Water Requirements

During construction of Alternative B, up to 600 acre-feet of water would be used for dust suppression (including truck wheel washing), soil moisture conditioning for compaction, and other purposes during the construction phase, a reduction of 400 acre-feet of water as compared to Alternative A due to the reduced ground disturbance and compaction that would occur. Water used for dust suppression may be further reduced by early application of gravel road surfacing and a dust palliative to roadways and laydown areas.

#### 2.5.2.5 Post-Construction Site Stabilization, Cleanup, and Restoration

Under DE-1, site stabilization/restoration would be limited to cleaning up trash, performing weed control and management as described for Alternative A, while allowing native vegetation to continue to occupy the site.

The processes for post-construction cleanup and weed control would be similar to Alternative A. However, the level of post-construction cleanup and weed control would be reduced under Alternative B due to the significant maintenance of more on-site vegetation under DE-1. Under Alternative B, targeted weed control would occur in accordance with a BLM-approved Weed Management Plan and Pesticide Use Plan only as needed.

### 2.5.3 Operation and Maintenance

Staffing requirements during O&M under Alternative B would be similar to Alternative A. The site maintenance program and water requirements under Alternative B would also be similar to Alternative A.

### 2.5.4 Decommissioning

At the end of the term, including any extensions, Alternative B would cease operation, the facilities would be decommissioned and dismantled, and the site would be restored. Decommissioning activities would be similar to those described for Alternative A; however, less ground disturbance would occur because trenching to remove conduits would not be required (DE-2) and fewer concrete pads would need to be removed (DE-3). Crushing of on-site vegetation may occur.

## 2.6 Alternative C: Reduced Acreage Alternative

Alternative C, the Reduced Acreage Alternative, was developed to avoid key areas containing sensitive vegetation, sand dune habitat, and cultural resources. This alternative has been refined since publication of the Draft EIS/EIR/PA to include an alternative location and layout of the gen-tie, on-site substations, energy storage system, and O&M building and to further reduce the solar plant site footprint. Additionally, this alternative would consist of two units: Unit 1, a solar facility, and Unit 2, an Energy Storage System (ESS). The two units could operate independently of each other and may be constructed in different time periods. It is anticipated that the separate units would be issued separate ROW grants.

Alternative C would be approximately 2,040 acres in size (460 acres less than Alternative A), as shown in Figure 2-4. Similar to Alternative A, Alternative C would interconnect to the regional electrical grid at the existing SCE CRS; however, the gen-tie line would be located to the east of the CRS and would be only up to 5,000 feet in length, a 1,000-foot reduction compared to Alternative A. The gen-tie ground wire and telecommunications fiber optic cable may be buried along the gen-tie route. The substations, SCADA systems, O&M building, and energy storage system would be constructed in generally the same manner and of the same sizes as described under Alternative A; however, the locations of these facilities under Alternative C would be as shown in Figure 2-4. The energy storage system could be connected to the solar facility or to the CRS. The SCADA system would interconnect to the fiber optic network at the CRS via a buried cable within the gen-tie corridor. A microwave tower, if required for redundant communications, would be located in the O&M facility area and would be similar to those described in Section 2.4.2.3.

The components of Units 1 and 2, and the components that would be shared by both units (and constructed at the time of whichever unit is first constructed), are shown in Table 2-4.

**TABLE 2-4**
**ALTERNATIVE C UNIT 1, UNIT 2, AND SHARED FACILITIES**

| Unit 1: Solar Facility | Unit 2: Energy Storage System | Shared Facilities |
|---|---|---|
| Solar PV array (6 fenced array areas) with perimeter fencing<br>Access roads between fenced PV array areas<br>Unpaved access road to northeast array<br>Electrical collector line to northeast array | Energy Storage System | Substation<br>Switchyard<br>O&M Building<br>Paved access road from Power Line Road to Substation area<br>Gen-tie and gen-tie corridor |

Alternative C would reduce the solar plant site area relative to Alternative A; however, the Applicant has indicated that reconfiguration of the necessary infrastructure would enable this alternative to generate 350 MW, which is the same as the capacity of Alternative A. As with Alternative A, Alternative C would use the same high-efficiency technology PV solar panels and would be designed and laid out primarily in 2 MW increments and mounted on conforming module blocks designed and sized to accommodate the irregular shape of the alternative footprint. The majority of the site under Alternative C would be occupied by solar arrays and power-conversion equipment. The overall area of ground disturbance for the panel arrays, energy storage system, gen-tie corridor, and ancillary facilities would be 82 percent of the disturbance proposed under Alternative A. All construction methods, workforce, and timing for Alternative C would be the same as described under Alternative A. Also, the construction workforce and full-time employee projection for operations would be the same as described under Alternative A. However, the reduction in ground disturbance would require less water for dust suppression. Based on the reduction in areas disturbed, the total water use is estimated at 820 acre-feet for Unit 1. The Applicant estimates that up to 50 acre-feet of water would be used for dust suppression and other purposes during construction of Unit 2, for a total construction-period water consumption of 870 acre-feet for Alternative C. Operationally, the water demands would be the same as Alternative A.

## 2.7 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, BLM would not approve ROW Grant Application CACA-51967 and CDFW would not issue a Lake and Streambed Alteration Agreement or an Incidental Take Permit for the proposed solar development. The BLM would not amend the CDCA Plan to identify the site as suitable for solar development and would manage the land under the CDCA Plan, as amended by the DRECP LUPA. The DRECP LUPA designates the proposed site as a DFA. Thus, if ROW Grant Application CACA-51967 were denied, the area would remain available for solar energy development as set forth in the DRECP LUPA.

The configuration, location, technology, construction methods, and other factors characterizing any future solar energy project, including whether another project would be proposed, are unspecified and uncertain. Therefore, the BLM and CDFW cannot predict with specificity the environmental consequences that might result from such development. The specific impacts of the No Plan Amendment/No Action/No Project Alternative with respect to other future development of this site are too speculative to evaluate meaningfully in this Final EIS and Proposed PA. The BLM and CDFW would be required to comply with NEPA and CEQA, respectively, to fully evaluate any future solar project proposed at this site under the DRECP LUPA.

## 2.8 Federal Lead Agency Preferred Alternative

The CEQ regulations (40 CFR 1502.14(e)) direct that an EIS identify the agency's preferred alternative or alternatives, if one or more exists. Identification as the "preferred alternative" is a preliminary indication of the lead agency's preference of action among the alternatives. A NEPA lead agency may select a preferred alternative for a variety of reasons, including the agency's priorities, in addition to the environmental considerations discussed in the EIS, and the identification of the preferred alternative may change between a draft EIS and final EIS.

Further, consistent with the regulations, various parts of separate alternatives that are analyzed in the draft can be "mixed and matched" to develop a complete alternative in the final. In accordance with NEPA (40 CFR 1502.14(e)), the BLM preliminarily identified Alternative C, as modified by the two design elements from Alternative B, as the preferred alternative in the Draft EIS/EIR/PA.

Since publication of the Draft EIS/EIR/PA, refinements in the BLM's method of weighting impacts, made in coordination with both USFWS and CDFW, have led to a preliminary preference for trenching to bury electrical connector lines internal to the solar plant site instead of installing up to 1,000 additional poles to place these lines overhead, as analyzed under DE-2 of Alternative B. The impacts of the ground disturbance associated with trenching, which would take place within the overall area of disturbance for constructing the solar plant, are preferable to the additional potential impacts of avian-powerline interaction associated with additional overhead collector lines. Additionally, following publication of the Draft EIS/EIR/PA, the Applicant submitted proposed refinements to the layout and sequencing of Alternative C to further reduce its footprint, reduce the length of the gen-tie line, and increase flexibility to implement Project components separately, as described in Section 2.6.

Accordingly, for purposes of this Final EIS and Proposed PA, the BLM preliminarily has identified a combination of DE-1 and DE-3 under Alternative B and the facility sizes, locations, and separation by unit under Alternative C as the preferred alternative. As shown in Table 2-5, the preferred alternative would require the smallest solar plant site to produce the same amount of electricity as the other alternatives, would use the least water during construction, and would minimize ground disturbance and vegetation removal. As analyzed in Section 3.2 (Air Resources), Section 3.3 (Biological Resources), and Section 3.18 (Water Resources), it appears on the basis of the analysis in this Final EIS and Proposed PA that this combination would minimize impacts to air quality, biological resources, surface waters, and groundwater.

**TABLE 2-5**
**COMPARISON OF ALTERNATIVES A, B, AND C AND FEDERAL LEAD AGENCY PREFERRED ALTERNATIVE**

| Component | Alternative A (Project) | Alternative B | Alternative C | Federal Lead Agency Preferred Alternative |
|---|---|---|---|---|
| PV array field | 1,859 acres | 1,859 acres | 1,526 acres | 1,526 acres |
| Energy storage substation | 4.1 acres | 4.1 acres | 4.1 acres | 4.1 acres |
| Solar substation | 4.1 acres | 4.1 acres | 4.1 acres | 4.1 acres |
| O&M building | 2000 sq. ft. | 2000 sq. ft. | 2000 sq. ft. | 2,000 sq. ft. |
| Shared switchyard | 1 acre | 1 acre | 1 acre | 1 acre |
| Energy storage system | 8.3 acres | 8.3 acres | 26 acres | 26 acres |
| Gen-tie line | 32 acres | 32 acres | 26 acres | 26 acres |
| Solar plant site fence line | 24.5 miles | 24.5 miles | 21 miles | 21 miles |
| Access roads (including perimeter roads) | 50.1 miles | 50.1 miles | 44 miles | 44 miles |
| Underground electrical conduit | 22 miles | 0 | 22 miles | 22 miles |
| Construction water demand | 1,000 acre-feet | 600 acre-feet | 870 acre-feet | 550 acre-feet |

# 2.9 CEQA Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives. In general, the environmentally superior alternative is defined as the alternative with the least adverse impacts to the environment.

As a general matter, a "no project" alternative frequently is identified as the environmentally superior alternative because such an alternative typically avoids all impacts of the proposal and would not create any new significant impacts of its own. In the event that no solar development occurs on the site, that scenario would be the environmentally superior alternative. However, as noted in Section 2.7, the No Plan Amendment/No Action/No Project Alternative in this analysis is reasonably likely to result in solar development of some kind and in some configuration on the proposed site consistent with the property's land use designations under the DRECP and Western Solar Plan. The CEQA Guidelines direct a lead agency to discuss "what would reasonably be expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with the available infrastructure and community services" (14 Cal. Code Regs. Section 15126.6(e)(2)). The current plans (DRECP and Western Solar Plan) and available infrastructure (the existing Colorado River Substation and long-distance transmission lines) make another solar development reasonably likely to occur in the foreseeable future. Because the specific environmental impacts of any future solar development proposed cannot be known with sufficient certainty at this time to provide a meaningful point of comparison, it would be speculative to identify with certainty that the No Plan Amendment/No Action/No Project Alternative is the environmentally superior alternative.

The Draft EIS/EIR/PA preliminarily identified Alternative C as the environmentally superior alternative based on the comparison of the various alternatives' potential environmental impacts as summarized in Table 2-5 and Table ES-1. However, as noted in the Draft EIS/EIR/PA, although the analysis reached a preliminary conclusion in this regard, with additional information received in or developed during the public review process, CDFW could change its identification of the environmentally superior alternative.

Since publication of the Draft EIS/EIR/PA, in coordination with the BLM, CDFW has identified a combination of alternatives as the environmentally superior alternative. For the same reasons described for the BLM's process in Section 2.8, CDFW chose to balance the ground-disturbance impacts of trenching for on-site collector lines against the potential avian impacts of the overhead lines analyzed in DE-2 under Alternative B such that DE-2 is not identified as being environmentally superior to trenching. However, DE-1 and DE-3 are environmentally superior to the proposed construction methods they would replace. Therefore, in this Final EIS and Proposed PA, the combination of DE-1 and DE-3 under Alternative B and the facility sizes, locations, and separation by unit under Alternative C is preliminarily identified as the environmentally superior alternative.

Nonetheless, following publication of this Final EIS and Proposed PA, CDFW could choose to balance the importance of each impact area differently or reach a different conclusion prior to certification of the Final EIR and taking action on the requested Lake and Streambed Alteration Agreement and take authorization.

## 2.10 Alternatives Considered but Eliminated from Detailed Analysis

The Applicant and Lead Agencies considered multiple alternative locations for the proposed solar development, including sites on private land and on other BLM-administered lands, as described in the subsections below. Consideration of alternative locations for large-scale solar facilities is restricted by several factors, including:

- Large land area requirements for the facilities;
- Technical requirements, including solar resource, slope, and hydrology;
- Resource protection requirements, including meeting management restrictions and objectives of the land owner/manager, as well as requirements of resource protection agencies; and
- Economic factors, especially as related to site accessibility, proximity to load centers, and proximity to transmission infrastructure

The site selection criteria also included:

- High level of solar insolation, based on climate, topography, and elevation;
- Availability of a contiguous area of land large enough to generate at least 350 MW of solar PV power and energy storage;

- Minimization of impact to areas designated for protection of resources or with known sensitive resources, including ACECs, Desert Wildlife Management Areas (DWMAs), wilderness areas, National Parks or Preserves, known cultural resources sites, and Category I desert tortoise habitat;
- Proximity to existing high voltage transmission facilities, including suitable interconnection and priority queue position; and
- Proximity to highway access.

To meet the objective of helping fulfill national and state renewable energy goals and greenhouse gas emissions reduction requirements, the Applicant began its site selection process by identifying feasible interconnection locations through a review of the Transmission Ranking Cost Report, filed by SCE with the California Public Utilities Commission. This review identified the existing CRS as a feasible location for interconnecting a renewable energy source, and resulted in a focus on the geographic vicinity of the CRS.

### 2.10.1 Private Land Alternatives

Private lands were considered for siting the proposed solar energy facility. In general, private property that is both large enough and also sufficiently close to existing interconnection infrastructure to site a large-scale solar facility, is not available in the geographic vicinity of the CRS. The location does have large areas of privately owned agricultural land in or around the city of Blythe. However, much of this land is currently under cultivation, has sufficient water sources to grow crops, and is part of an interdependent hydrologic system managed through agreements with the Metropolitan Water District of Southern California. In addition, many of these parcels are encumbered by Williamson Act contracts, and purchasing and converting such land, including prime farmlands, to nonagricultural uses would significantly increase the time, effort, and cost of obtaining control of these parcels for solar development. These lands are also located in closer proximity to, and in the floodplain of, the Colorado River, potentially increasing environmental impacts and flood risks as compared to sites, such as the proposed site, located at a higher elevation.

In general, this same situation applies throughout the California desert region. There are limited areas where contiguous private land parcels exist that have the appropriate slope and solar resource characteristics, as well as feasible interconnection access. Locations where private land is available also often include parcels that are designated as prime farmland, Williamson Act contracted lands, and Unique Farmland of Statewide Importance, further limiting the feasibility of acquiring site control for renewable energy development. In areas where such parcels do exist, the feasibility and timing of acquiring the necessary site control agreements with multiple owners to acquire a contiguous site precludes the use of private land as a feasible alternative.

For these reasons, a private land alternative was eliminated from further consideration as technically and economically infeasible and was not carried forward for detailed consideration.

### 2.10.2 Alternative BLM-Administered Land

The potential for siting solar facilities on other BLM land in the area was evaluated. Areas with the highest solar energy production potential are sometimes precluded from development by special designations for resource protection—these include ACECs, DWMAs, and wilderness—and thus utility-scale solar energy development is inconsistent with basic policy objectives for management of the area. An example of this is lands within the Mule Mountain ACEC. In evaluating potential sites, the Applicant also referred to recent BLM planning documents such as the Solar PEIS and DRECP to identify areas favorable for development. However, in some cases, such as dry lake areas, development on potential sites is precluded by the physical and technical characteristics of the site.

As a result of the factors discussed above, development of an alternative to the proposal included in the Proposed Action on other lands administered by BLM has been determined not to be feasible, would be inconsistent with the basic policy objectives for management of the area, and would not achieve the purpose and need for either NEPA or CEQA purposes.

The proposed site was previously proposed for solar development by a prior applicant using an alternative technology. The development of this site with the current Applicant's solar PV technology would result in less disturbance and environmental impact than the previous proposal. Moreover, BLM has already determined that the proposed site is suitable for solar development by both the Western Solar Plan and the DRECP. The Western Solar Plan identified specific locations that, at a plan level, appear well suited for utility-scale production of solar energy where the BLM would prioritize development (i.e., SEZs) as well as categories of lands to be excluded from such development. The area encompassing the site was designated as the Riverside East SEZ, signifying that the site and the surrounding area are preferred for large-scale solar energy development based on environmental and technical suitability for such development.

Although both the Western Solar Plan and the DRECP include a process for proposing renewable energy projects on "variance lands" outside of designated SEZs and DFAs, the objective of these landscape-level planning efforts was to promote development in certain designated areas. Through the Western Solar Plan, BLM already considered whether other locations on public lands might be suitable for solar development and, after years of review, determined that the Riverside East SEZ, encompassing the proposed site, contained areas most suitable for solar development. Similarly, the DRECP considered technical suitability and resource impacts in implementing new land use allocations for resource protection, and for the focus of renewable energy development. Although the application under consideration by the BLM is exempt from the land use decisions made in the DRECP LUPA because it is a pending application and has been pending since before the DRECP LUPA was adopted, the DRECP recognized the area of the proposed site as suitable for solar development by designating it as a DFA. As a result of the technical, procedural, and environmental constraints discussed above, timely development of a solar project comparable to the Proposed Action on other lands administered by BLM would not be feasible, and is likely to be inconsistent with the basic policy objectives for management of areas outside of the proposed DFAs.

## 2.10.3 Alternative Technology Considerations

The former Sonoran West Project proposed for this site would have developed concentrating solar power towers. In addition to considering retaining concentrating solar power tower technology, the Applicant evaluated other forms of concentrating solar power generation. In each case these technologies required a larger land disturbance, significant water usage during operation, and more severe environmental impacts. Therefore, concentrating solar power technology alternatives were eliminated from further consideration.

### 2.10.3.1 Other Types of Renewable Energy Projects

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 Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands.

### 2.10.3.2 Conservation and Demand-Side Management

This potential alternative to utility-scale solar PV energy development consists of a variety of approaches to reduce electricity use, including energy efficiency and conservation, building and appliance standards, and load management and fuel substitution. With population growth and increasing demand for energy, conservation and demand-side management alone is not sufficient to address all of California's energy needs. These efforts also do not respond to federal mandates to promote, expedite, and advance the production and transmission of environmentally sound energy resources, including renewable energy resources and, in particular, cost-competitive solar energy systems at the utility scale. Conservation and demand-side management approaches also were rejected from detailed consideration because they would not meet the BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Furthermore, neither the BLM nor CDFW has authority or influence over energy conservation and demand-side management, other than on lands that it administers or activities it has jurisdiction over. Accordingly, this potential alternative was rejected from detailed consideration.

#### 2.10.3.3 Distributed Generation and/or Distributed Storage

Under this alternative, the Applicant's utility-scale solar development would not be constructed. Instead, this alternative would involve the installation of distributed generation and/or distributed storage, including but not limited to residential and commercial rooftop solar panels and other renewable distributed energy sources and storage options. As a single option to meet energy provided by Alternative A, the distributed generation and/or distributed storage alternative would not meet the Applicant's project objectives or the BLM's purpose and need to respond to the Applicant's application under Title V of the FLPMA for a ROW grant to construct, operate, maintain, and decommission a solar PV facility on public lands. Additionally, distributed generation would not meet the BLM's goals to promote the responsible production of renewable energy on BLM-administered lands.

As reported in the 2020 California Renewables Portfolio Standard Annual Report (CPUC 2020), there remain challenges for small distributed generators, including high interconnection costs. While the large investor-owned utilities are generally on track to meet RPS requirements, of the 29 community choice aggregators (CCAs) that serve one quarter of the total electricity load in California, 24 are at risk of failing to meet RPS requirements for the 2021-2024 compliance period, and must procure long-term contracts for renewable electricity. Therefore, it is expected that development of both distributed generation and utility-scale solar power will be needed to meet future energy needs in the United States, along with other energy resources and energy efficiency technologies. For a variety of reasons (e.g., current limits on integrating distributed generation into the electric grid, costs, lack of electricity storage in most systems, and continued dependency of buildings on grid-supplied power), distributed solar energy alone cannot meet the goals for renewable energy development. Ultimately, both utility-scale and distributed generation solar power will need to be deployed at increasing levels, and the highest penetration of solar power overall will require a combination of both types.

Furthermore, neither the BLM nor CDFW has authority or influence over the development of distributed generation resources, other than on lands or structures that it administers or has jurisdiction over. Therefore, this alternative has not been carried forward for further consideration.

# CHAPTER 3
# Environmental Analysis

## 3.1 Introduction

This chapter presents the assessment of environmental consequences or the impacts or effects[1] that would result from implementation of the Project or other alternatives described in Chapter 2, *Project and Alternatives*, on resources, resource uses, special designations, and other important topics (including public health and safety, social and economic considerations, and environmental justice conditions). Resources include air, soil, water, vegetative communities, wildlife, and wildland fire ecology and management, as well as cultural, paleontological, and visual resources. Resource uses include livestock grazing management, land use planning and realty, minerals, recreation management, transportation and public access, and utilities and public services. Special designations include areas of critical environmental concern (ACECs), National Conservation Lands, wilderness areas, and units of the National Park System. Wilderness study areas and lands with wilderness characteristics also are considered.

Pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), for each resource area evaluated, this chapter includes a description of the regional and local environmental setting; a summary of the analytical methodology used; an analysis of direct, indirect, and cumulative effects; identification of mitigation measures proposed to address specified effects; an explanation of the residual impacts that would remain after the implementation of all mitigation measures; and analysis of CEQA-specific significance criteria as identified in Appendix G of the CEQA Guidelines (14 Cal. Code Regs. Section 15000 et seq.). The full text for all identified mitigation measures is provided in Appendix B. A summary of the applicable laws regulations and plans is provided in Appendix E. An analysis of Project consistency with the California Desert Conservation Area (CDCA) Plan for each applicable resource and resource use is provided in Appendix G. This chapter documents the Lead Agencies' analysis of the direct, indirect, and cumulative effects that could occur under NEPA and CEQA as a result of implementing the Project or other alternatives. The analysis 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. As part of the analysis, mitigation measures are also identified that could avoid or reduce adverse impacts under NEPA and significant impacts under CEQA, and the analysis summarizes the residual and unavoidable adverse impacts on an issue-by-issue basis.

### 3.1.1 Baseline

The baseline[2] for purposes of this Final Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) and Proposed Plan Amendment (PA) is the existing condition on or about March 9, 2018, which is the date the Bureau of Land Management (BLM) published a Notice of Intent (NOI) announcing the intentions of the BLM and the California Department of Fish and Wildlife (CDFW) to prepare a Draft EIS/EIR/PA (83 Fed. Reg. 10516). CDFW published the Notice of Preparation (NOP) for the Proposed Project on March 9, 2018. Sections 3.2 through 3.19 present details of the pre-Project baseline environmental conditions to which the potential impacts of the proposed Project and all alternatives were compared.

1 The terms "effects" and "impacts" as used in this document are synonymous and could be beneficial or detrimental.

2 For the purposes of this Final EIS and Proposed PA, "baseline" refers to the conditions or setting that existed at the time of the publication of the NOI and NOP and against which potential impacts of the Project and alternatives were evaluated.

## 3.1.2 Analytical Assumptions

The impact analyses presented in this chapter were conducted using the following assumptions:

1. The laws, regulations, and policies applicable to the BLM when it authorizes right-of-way (ROW) grants for renewable energy development facilities would be applied consistently for the Project and alternatives.
2. The laws, regulations, plans, and policies applicable to the CDFW implementation of the Fish and Game Code would be applied consistently for all action alternatives.
3. The proposed facility would be constructed, operated, maintained, and decommissioned as described in each action alternative.

## 3.1.3 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" used in this document are synonymous and could be beneficial or detrimental. The terms "direct effects," "indirect effects," and "cumulative effects" are defined below.

**Direct Effects:** For NEPA purposes, Council on Environmental Quality (CEQ) regulations define direct effects (or impacts) as effects "…which are caused by the action and occur at the same time and place" (40 CFR 1508.8(a)). For CEQA purposes, CEQA Guidelines Section 15358 defines "effects" and "impacts" synonymously to include direct or primary effects, which are caused by a project and occur at the same time and place.

**Indirect Effects:** CEQ regulations and the CEQA Guidelines both define indirect or secondary effects as effects that are caused by a project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8(b); CEQA Guidelines Section 15358(b)).

**Cumulative Effects:** 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). According to CEQA Guidelines Section 15355, the term "cumulative effects" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts, even if the individual effects of either one would not. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (Id.). The scenario used for defining and analyzing cumulative impacts is discussed in Section 3.1.5.

CEQ regulations (40 CFR Section 1508.27) require the consideration of the context and intensity of potential impacts. Context normally refers to the setting, whether local or regional, and intensity refers to the severity of the impact. Also, the analysis includes a discussion of the possible conflicts between the proposed Project and the objectives of federal, regional, state, and local land use plans and policies for the area concerned (40 CFR Section 1502.16(c)).

## 3.1.4 CEQA Significance Criteria and Determinations

This CEQA Significance Criteria and Determinations sections describe the criteria used to determine which impacts should be considered potentially significant. Significance criteria are based on those identified in Appendix G of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387).

CEQA defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in the environment" (California Public Resources Code Section 21068), and the Guidelines further clarify that a significant impact is a substantial adverse change "in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance" (Section 15382). These are general definitions, and CEQA requires agencies to use their best judgment to determine whether an impact is significant; it is not a mechanical process. The agency must base its decision in light of the whole record and must consider the impact's setting: "For example, an activity which may not be significant in an urban area may be significant in a rural area" (CEQA Guidelines Section 15064(a)(1), (b)).

Consistent with CEQA statute and guidelines, CEQA determinations regarding an impact's significance are made on the basis of high-quality, credible scientific information and professional judgment. Where a significant impact is reasonably expected to occur, this analysis discloses that information. All impact determinations are projections based on the expectation that the described impacts, or lack thereof, will occur if the proposed Project is approved and implemented.

The categories used to designate impact significance for the purposes of CEQA are:

- **No Impact.** There would be no impact if there is no potential for impacts, or if the environmental resource does not occur within the Project area or the area of potential effect. For example, there would be no impact related to tree removal if no tree removal is proposed in the Project area.
- **Less than significant.** This determination applies if there is a potential for some limited impact, but not a substantial adverse (or beneficial) effect that qualifies under the applicable significance criterion as a significant impact.
- **Less than significant impact with mitigation incorporated.** This determination applies if the Project would result in an adverse effect that exceeds/qualifies under the applicable significance criterion, but feasible mitigation is available that would eliminate any adverse impact or reduce it to a less-than-significant level.
- **Significant and unavoidable.** This determination applies if the proposed Project would result in an adverse effect that exceeds/qualifies under the applicable significance criterion and even with mitigation implemented to lessen the impact, if available, the residual effect would remain significant. Therefore, the impact would be significant and unavoidable.

## 3.1.5 Resources and Uses Not Affected or Present in the Project Area

Resources and uses that are not present at or nearby the Project site and would not be affected by the Project alternatives include the following, which are not analyzed further in this Final EIS and Proposed PA:

- National wild, scenic, or recreational rivers
- National monuments
- Cooperative management and protection areas
- Outstanding natural areas
- Wetlands
- Significant mineral resource areas or locally important mineral resources
- Wild horses and burros
- Livestock grazing
- Agriculture and Forestry Resources: Forest reserves, forest or timberland, Williamson Act contract lands, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance

In Appendix G of the CEQA Guidelines, agriculture and forestry resources and mineral resources are identified as environmental factors that may be affected by a project. As noted in the list above, there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the Project site, nor is there any land under a Williamson Act contract (California Department of Conservation, Division of Land Resource Protection 2016a, 2016b). The California Desert Conservation Area Plan of 1980, as amended (CDCA Plan) indicates that on all Multiple-Use Class designations on the Project site, agricultural uses are not allowed; therefore, there is no land zoned for agricultural use on the Project site (BLM 1999). Additionally, there is no forest or timberland on the Project site (Pub. Res. Code Section 12220(g), 4526; Gov't Code Section 51104(g)). Therefore, the Project and alternatives could have no impact on agriculture and forestry resources, and the significance criteria listed in CEQA Guidelines Appendix G, Section II, in addition to prime or unique farmlands as recommended by CEQ guidance (1980), are not discussed further.

The Project site is not in a significant mineral resources area (California Department of Conservation, Division of Mines and Geology 1994; U.S. Geological Survey 2003). Furthermore, local land use plans do not indicate the presence of locally important mineral resources on the Project site (Riverside County 2015). Therefore, the

Project and alternatives would not result in the loss of availability of a known mineral resource, nor result in the loss of a locally important mineral resource recovery site. Furthermore, following decommissioning, access to any currently unknown mineral resources present in the area would be possible. The Project and alternatives would have no impact related to any known mineral resources, and the significance criteria listed in CEQA Guidelines Appendix G, Section XII, are not discussed further.

## 3.1.6 Cumulative Scenario

### 3.1.6.1 Approach to the Analysis of Cumulative Effects

This Final EIS and Proposed PA present the analysis of cumulative impacts of the construction, operation, maintenance, and decommissioning of the proposed Project and alternatives. The cumulative effects analysis highlights past actions that are closely related either in time or space (i.e., temporally or in geographic proximity) to the Project, present actions that are ongoing at the same time this Final EIS and Proposed PA were being prepared, and reasonably foreseeable future actions, including those for which there are existing decisions, funding, or formal proposals or which are highly probable, based on known opportunities or trends.

Consistent with Section 6.8.3.5 of the BLM NEPA Handbook, this Final EIS and Proposed PA consider the direct and indirect effects of the Project and action alternatives together with the effects of the other actions that could combine geographically and temporally (i.e., would be causing impacts in the same area at the same time as the Project and alternatives) and, thereby, cause a cumulative effect. For each resource or issue considered in Sections 3.2 through 3.19 of this Final EIS and Proposed PA, 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.

If the Project or an alternative would have no direct or indirect effects on a resource, then it could not cause or contribute to potential cumulative effects on that resource. The Project and alternatives would cause no impacts related to the resource areas and uses identified in Section 3.1.5. Consequently, cumulative impacts to these resource areas and uses are not discussed further.

For the remaining resource areas and uses, this Final EIS and Proposed PA present the analysis of potential cumulative effects of the Project combined with the effects of past, other present, and reasonably foreseeable future projects (as presented in Table 3.1-1), and the determination of whether the incremental impacts of the Project are cumulatively considerable. As noted above, the geographic scope of the cumulative effects analysis for each resource area is tailored to the natural boundaries of the affected resource. Potential cumulative effects could occur during the Project’s construction period, during the projected 30-year term of Project operations, or during post-Project decommissioning activities. Existing conditions within the cumulative impacts area of effect reflect a combination of the natural condition and the effects of past actions in the affected area.

### 3.1.6.2 Cumulative Scenario

The cumulative scenario for the Project includes the projects identified and described in Table 3.1-1. Table 3.1-1 identifies each project, the geographic area relevant to the Project, cumulative project size, status, and description of the identified Project. Projects listed are separated by category: “Solar Projects,” “Wind Energy Projects,” “Electrical Facilities Projects,” and “Other Construction.” The projects under “Other Construction” include other known actions or activities that are located or would occur within the cumulative analysis impacts area. Projects identified have either been approved for planning, are pending approval, or have been built. The information provided in Table 3.1-1 was obtained through a combination of administrative research, available EISs and EIRs for similar renewable projects, and information provided by the BLM and CDFW. Projects were included based on their proximity to the proposed Project and relevance to Riverside County. The entire suite of planned projects that are considered to be possible for future development is not expected to actually be built due to construction funding constraints, schedule, and/or delays. Given the uncertain and challenging economic circumstances facing federal and state economies as well as private developers, it is not ensured that future funding and other necessary support will be sufficiently available for all of the proposed projects to be realized within the anticipated schedules. The cumulative project scenario includes all projects identified as reasonably foreseeable as of the publication of the Final EIS and Proposed PA.

**TABLE 3.1-1**
**CRIMSON SOLAR CUMULATIVE PROJECTS LIST**

| Project Name | Location | Project Size | Status | Project Description |
|---|---|---|---|---|
| **Solar Projects** | | | | |
| Modified Blythe Solar Power Project; CACA-48811 | 8 miles northeast of the Project site | 4,138 acres | Units 1 and 2 are currently operational, Units 3 and 4 are under construction | 485 MW PV solar plant (with four operation phases) on BLM-administered public land, 13-mile gen-tie to the Colorado River Substation (BLM 2014, CEC 2018) |
| Blythe Mesa Solar Project (BMSP) | 9.5 miles northeast of the Project site in Blythe and unincorporated Riverside County | 3,660 acres | Two units operational (110 MW and 125 MW) | 485 MW PV solar plant; includes an 8.4-mile-long gen-tie line to the Colorado River Substation (County of Riverside and BLM 2014 and BLM 2018f) |
| NRG Blythe PV Project | Blythe | 200 acres | Began operations in December 2009 | 21 MW solar PV constructed by First Solar and sold to NRG Energy (BLM 2018d) |
| Desert Center 50 | Desert Center; 38 miles northwest of Blythe | 452 acres | Under review by County of Riverside | A planned 49.5 MW fixed flat-panel photovoltaic solar power plant |
| Arica | Desert Center; 40 miles northwest of Blythe | 4,000 acres | ROW application filed 2016; under review by BLM | A planned 400 MW solar photovoltaic generating facility and new 230 kV gen-tie line (BLM 2017a) |
| Victory Pass I | Desert Center; 40 miles northwest of Blythe | 1,800 acres | Under review by BLM | A planned 200 MW solar photovoltaic generating facility and new 230 kV gen-tie line |
| Quartzsite Solar Energy Project | 10 miles north of Quartzsite, AZ; 40 miles northeast of the Project site | 1,450 acres | Approved May 30, 2013; construction start date has not been announced (BLM, 2018e) | 100 MW concentrating solar power plant; less than 1.5-mile transmission line (BLM 2017b) |
| Genesis Solar Energy Project; CACA-48880 | North of I-10, 25 miles west of Blythe and 27 miles east of Desert Center | 1,950 acres | Existing | 250 MW solar thermal electric generating facility, (two adjacent, independent plants with a 125 MW capacity each) using solar parabolic trough technology; includes 6-mile natural gas pipeline and 5.5-mile transmission line interconnecting Blythe Energy Center to Julian Hinds Transmission Line. Construction completed in April, 2014. (BLM 2018b) |
| Desert Sunlight; CACA-48649 | North of Desert Center | 4,245 acres | Existing | 550 MW solar PV (BLM 2011) |
| Palen Solar Project (formerly Palen 1) CACA-048810 | North of I-10, 10 miles east of Desert Center; 33 miles northwest of Blythe | 5,160 acres | Approved November 2018. Commercial operation may be phased between 2018 and 2021. | 500 MW solar PV and gen-tie line (BLM 2018c, 2018e) |
| Blythe Solar Power Generation Station 1 | 6 miles north of Blythe | 29.4 acres | Existing | 4.76 MW solar PV (BLM 2018d) |
| Palo Verde Mesa Solar Project | 10 miles northeast of the Project site | 3,400 acres | Approved September 2017 | 450 MW solar PV and 14.5-mile gen-tie line (County of Riverside 2017) |
| McCoy Solar Energy Center | 10 miles northeast of the Project site | 4,014 acres | The first 250 MW was constructed in 2016 (LCG Consulting, 2016) | Up to 750 MW solar PV; switchyard and 13.2-mile 230 kV gen-tie to the Colorado River Substation (BLM 2013a, 2013b) |
| Desert Harvest Solar Farm; CACA-049491 | 6 miles north of Desert Center | 1,208 acres | Record of Decision signed March 2013 | 150 MW solar PV; 220 kV gen-tie to the Red Bluff Substation. (BLM 2016a) |

**TABLE 3.1-1 (CONTINUED)**
**CRIMSON SOLAR CUMULATIVE PROJECTS LIST**

| Project Name | Location | Project Size | Status | Project Description |
|---|---|---|---|---|
| **Solar Projects (cont.)** | | | | |
| Desert Quartzite Solar Project | Immediately east of the Project site | 2,673 acres | Approved January 2020 | 450 MW solar PV, 230 kV gen-tie to the Colorado River Substation (BLM 2016b) |
| BNR100126 | 8 miles south of the intersection of HWY 177 and HWY10 | 400 acres | Building Permit applied for December 2010 | 49.5 MW solar PV plant (PP24754) (BLM 2018d) |
| **Wind Energy Projects** | | | | |
| Graham Pass Wind Energy Project | Graham Pass Rd. between Desert Center and Blythe; 26 miles southwest of the Project site | 30,855-acres | Testing | 600 MW wind farm that would include up to 200 wind turbines; BLM application CACA 052856 (CEC 2013a) |
| Eagle Mountain; CACA-51664 | Eagle Mountain, north of Desert Center | 3,500 acres | Testing | Wind facility with met towers (CEC 2013b) |
| **Electrical Facilities** | | | | |
| Devers–Palo Verde 2 Transmission Line; CPUC A.05-04-015 | Western Riverside County to Blythe | 90 acres | Existing | 41.6-mile-long transmission line; second 500 kV transmission line between SCE's Devers substation and Valley substation (CPUC 2012) |
| Devers–Palo Verde 1 Transmission Line | From Palo Verde in Arizona to Devers Substation, San Bernardino County | 230 miles | Existing | Existing 500 kV transmission line parallel to I-10 from Arizona to the SCE Devers Substation, near Palm Springs (BLM 2018d) |
| Colorado River Substation Expansion; CPUC Application No. A.05-05-015 | 10 miles southwest of Blythe (adjacent to the Project site) | 90 acres | Existing | 500/230 kV substation constructed in an area approximately 1,000 feet by 1,900 feet (BLM 2018d) |
| Red Bluff Substation CPUC A.10-11-012 | Adjacent to the south side on I-10, east of Aztec Road, and west of Corn Springs Road, in unincorporated Riverside County | 75 acres | Existing | 500/250 kV substation, two new parallel 500 kV transmission lines of about 2,500 to 3,500 feet each looping the substation into the existing DPV 500 kV transmission line (DPV1), and two parallel 500 kV transmission lines of about 2,500 to 3,500 feet each looping the new substation into the DPV2 line (CPUC 2011) |
| West-wide Section 368 Energy Corridors | Energy corridor paths are located throughout Southern California | BLM, DOE, U.S. Forest Service | Approved by BLM and U.S. Forest Service | Designation of corridors on Federal land in the 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). USDA Forest Service 2009) |
| Eagle Mountain Pumped Storage Hydroelectric Project | Eagle Mountain iron ore mine, north of Desert Center; 42 miles northwest of the Project site | 1,524 acres | FERC approved in 2012; BLM approved gen-tie and water supply pipeline in 2018. FERC extension for start of construction valid through June 2020. | 1,300 MW pumped storage project, designed to store off-peak energy to use during peak hours. (State Water Resources Control Board 2010). A 500 kV double circuit transmission line will convey power to and from the Project through an interconnection collector substation located west of Desert Center, California. (SWRCB 2013) |
| Blythe Energy Project Transmission Line; 99-AFC-C8 | From the Blythe Energy Project (Blythe) to Julian Hinds Substation | 67.4 miles | Existing | Transmission line modifications including upgrades to Buck Substation, new 230 kV transmission line between Buck Substation and Julian Hinds Substation, upgrades to the Julian Hinds Substation, installation of 6.7 miles of new 230 kV transmission line between Buck Substation and SCE's DPV 500 kV transmission line. (CEC 2006) |

**TABLE 3.1-1 (CONTINUED)**
**CRIMSON SOLAR CUMULATIVE PROJECTS LIST**

| Project Name | Location | Project Size | Status | Project Description |
|---|---|---|---|---|
| **Electrical Facilities (cont.)** | | | | |
| Desert Southwest Transmission Line; CACA-044491 | West of the Blythe Power Plant, approximately 4.5 miles west of Blythe to Devers Substation, approximately 10 miles north of Palm Springs | 118 miles long | Approved June 2007, Plan of Development submitted 2009 | 500 kV transmission line from Blythe Energy Project Substation to the existing Devers Substation. Located adjacent to SCE's existing 500 kV DPV1 transmission line. (Federal Energy Regulatory Commission 2011) |
| Blythe Energy Project II | Blythe, north of I-10, 7 miles west of the CA/AZ border | 76 acres | Approved, but construction not begun | 520 MW combined-cycle natural gas-fired electric generating facility. Project is connected to the Buck Substation owned by WAPA. (BLM 2018d) |
| Ten West Link Transmission Line | From Tonopah, AZ to the Colorado River Substation | 111 to 126 miles | Draft EIS and Draft Resource Management Plan Amendments published August 2018 | 500 kV transmission line. The 17-mile portion of the proposed project in California would begin at the Colorado River Substation west of the city of Blythe and run eastward to the Colorado River near the I-10 corridor in eastern Riverside County, CA. (BLM 2018a) |
| Headgate Rock-Blythe No. 1 Black Point Mesa Reroute | North of Blythe | | In preparatory and planning stages | WAPA proposes to reroute an existing power line. (BLM 2014b) |
| **Other Project Types** | | | | |
| Three Commercial Projects | Blythe | | Approved | Three commercial projects have been approved by the Blythe Planning Department including the Agate Road Boat & RV Storage, River way Ranch Specific Plan, and Agate Senior Housing Development. (BLM 2018d) |
| Pavement Rehabilitation | East of Desert Center | | Ready-to-List Project | Caltrans District 8 project involving pavement rehabilitation along I-10. (Caltrans 2018) |
| Eagle Mountain Boundary Study | Northwest of Desert Center | 20,000 acres | Environmental Assessment and public review completed | The NPS is studying a potential boundary change at Joshua Tree National Park near Eagle Mountain. (NPS 2018) |
| Interstate 10 (I-10) | Linear project running from Santa Monica, through Blythe, and into Arizona | | Existing | I-10 is a major east-west route for trucks delivering goods to and from California. It is a four lane divided highway in the Blythe region. (Caltrans 2017) |
| Chuckawalla Valley State Prison | 19025 Wiley's Well Rd. Blythe | 1,080 acres | Existing | State prison providing long-term housing and services for male felons classified as medium and low-medium custody inmates jointly located on 1,720 acres of state-owned property. Assessor's Parcel Numbers (APNs) 879040006, 008, 012, 027, 028, 029, 030. (BLM 2018d) |
| Ironwood State Prison | 19005 Wiley's Well Rd. Blythe | 640 acres | Existing | ISP jointly occupies with Chuckawalla Valley State Prison 1,720 acres of state-owned property, of which ISP encompasses 640 acres. The prison complex occupies approximately 350 acres with the remaining acreage used for erosion control, drainage ditches, and catch basins. APNs 879040001, 004, 009, 010, 011, 015, 016, 017, 018, 019, 020. (BLM 2018d) |
| Recreational Opportunities | Eastern Riverside County and adjacent parts of La Paz County | | Existing | BLM has numerous recreational opportunities on lands in eastern Riverside County along the I-10 corridor including the Wiley's Well Campground, Coon Hollow Campground, and multiple LTVAs. (BLM 2018d) |

**TABLE 3.1-1 (CONTINUED)**
**CRIMSON SOLAR CUMULATIVE PROJECTS LIST**

| Project Name | Location | Project Size | Status | Project Description |
|---|---|---|---|---|
| **Other Project Types (cont.)** | | | | |
| Kaiser Mine | Eagle Mountain, north of Desert Center | | Existing | Kaiser Steel mined iron ore at Kaiser Mine in Eagle Mountain and provided much of the Pacific Coast steel in the 1950s. Mining project also included the Eagle Mountain Railroad, 51 miles long. Primary steelmaking closed in the 1980s. APN 701380031. (BLM 2018d) |
| Chuckwalla Valley Raceway | Desert Center Airport (no longer a community airport) | 400 acres | Existing | Car and motorcycle race track located on 400 acres of land that was formerly the Desert Center Airport. APNs 811-142-016, 811-142-006. Small private airstrip kept as part of project. Construction completed in March 2010. (BLM 2018d, Chuckwalla Valley Raceway 2019) |
| Eleven Residential Developments | Blythe | | Approved/Under Construction | Eleven residential development projects have been approved by the Blythe Planning Department including: Van Weelden (184 SFR), Sonora South (43 SFR), Irvine Assets (107 SFR), Chanslor Village (79 SFR), St. Joseph's Investments (69 SFR), Edgewater Lane (45 SFR), Chanslor Phase II & III (78 SFR), Chanslor Place Phase IV (57 SFR), Palo Verde Oasis Phase IV (29 SFR), Mesa Bluffs Villas Phase IV (26 attached SFR), and Agate Senior Housing (81 MFR). Two of these, Chanslor Place and Mesa Bluffs Villas, ad under construction as of March 2016. (BLM 2018d) |
| RCL00161R1 | North of 95, east of Intake Blvd. | 38 acres | Reclamation Plan applied for September 2009 | Expansion of gravel pit from 12.95 acres to 38 acres (BLM 2018d) |
| BGR100258 | Ehlers Blvd and W Chanslor Way | <1 acre | Grading Permit applied for November 2010 | Grading permit for 9000-square-foot church (BLM 2018d) |

NOTES:
[1] Project location information not available

BLM: U.S. Department of the Interior, Bureau of Land Management
CEC: California Energy Commission
CPUC: California Public Utilities Commission
DPV: Devers-Palo Verde
EIS: Environmental Impact Statement
I-10: Interstate 10
kV: kilovolt
MW: megawatt
NPS: National Parks Service
POD: Plan of Development
PV: photovoltaic
ROW: right-of-way
SCE: Southern California Edison
SFR: single family residence
USDA: United States Department of Agriculture
WAPA: Western Area Power Administration

## 3.1.7 Mitigation Measures Identified in the Analysis

For impacts identified in the following resource sections, mitigation measures have been developed to avoid or reduce potential adverse environmental effects associated with the Project and alternatives. The full text of the mitigation measures is provided in Appendix B. These measures would be implemented during all appropriate phases of the Project, from initial ground breaking and construction, to operation and maintenance, and through closure and decommissioning, as specified in each measure.

3.2 Air Resources
3.3 Biological Resources
3.5 Cultural and Historic Resources
3.7 Geology and Soil Resources
3.8 Hazards and Hazardous Materials
3.11 Paleontological Resources
3.12 Recreation and Public Access (Off-Highway Vehicles)
3.16 Utilities and Public Services
3.17 Visual Resources
3.18 Water Resources
3.19 Wildland Fire Ecology

The analysis considers the Project's potential environmental impacts before and after the implementation of all mitigation measures and assumes that the Project would be constructed, operated, maintained, and decommissioned in accordance with the regulatory requirements of federal, state, and local agencies.

To ensure the effective implementation of the mitigation measures identified to address adverse impacts, an Environmental and Construction Compliance Monitoring Plan/Mitigation Monitoring, Reporting, and Compliance Program would be prepared if the Project or another action alternative were to be approved.

Because these mitigation measures are derived from a variety of sources, they also may be required by agencies other than the BLM or CDFW and their implementation would be enforced by those other agencies. For instance, any Reasonable and Prudent Measures identified by the U.S. Fish and Wildlife Service (USFWS) as part of the federal Endangered Species Act Section 7 process would be included in the Record of Decision (ROD). If the Project or another action alternative is approved, the Applicant would be required by the ROD and the ROW grant to comply with the requirements of those other agencies (see, for example, 43 CFR 2805.12(a) [federal and state laws and regulations], and (i)(6) [more stringent state standards for public health and safety, environmental protection and siting, constructing, operating, and maintaining any facilities and improvements on the ROW]). Any noncompliance with implementation of these other requirements may affect the status of the ROD and the ROW grant.

Six mitigation measures require compensatory mitigation: BIO-18, BIO-19, BIO-20, BIO-26, BIO-28, and BIO-29. The CDCA Plan, as amended by the NECO Plan, identifies compensatory mitigation requirements for impacts to the Mojave desert tortoise and Mojave fringe-toed lizard. Additionally, the Biological Opinion prepared by USFWS (included as Appendix I.13) identifies required compensatory mitigation (i.e., Conservation Measure 11) to address impacts to the Mojave desert tortoise under the Endangered Species Act. The remaining measures have been considered and incorporated by BLM as part of California state laws, plans, and programs that require compensatory mitigation, in accordance with BLM Instruction Memorandum 2019-018.

## 3.1.8 Residual Impacts Definition

Each of the resource sections in Chapter 3 of this Final EIS and Proposed PA describes the "residual impacts" of the Project – that is, "those effects remaining after mitigation has been applied to the proposed action or an alternative" (BLM NEPA Handbook H-1790-1). This description of residual impacts as defined under NEPA is distinct from CEQA significance determinations and is intended to describe the physical changes in the environment that would occur even when all applicable mitigation is applied. The disclosure that residual impacts would occur, as required by the BLM NEPA Handbook, is not intended to imply that a significant and unavoidable impact has been identified under CEQA.

# 3.2 Air Resources

## 3.2.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning air resources. The regulations applicable to this analysis are summarized in Appendix E.

Development of this section was based on a review of existing documentation of air quality conditions in the region; air quality regulations from U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), the Mojave Desert Air Quality Management District (MDAQMD), and the South Coast Air Quality Management District (SCAQMD); and information from the Project Description, the RE Crimson Solar Project Air Quality Technical Report (AECOM 2019a), and the Crimson Solar Project, Reduced Acreage Alternative Air Quality Analysis and Results Memorandum (AECOM 2019b). In addition, subsequent to the preparation of the AECOM report and memo, the authors of the Final EIS and Proposed PA revised the emissions estimates to reflect updated Project truck trip information; show the exhaust and dust fractions of particulate matter; and reflect a more accurate mitigated construction emissions scenario (ESA 2019). Full copies of the reports are provided in Appendices H.1 and H.2 and the author emission revisions are provided in Appendix H.3.

## 3.2.2 Regional and Local Environmental Setting

### 3.2.2.1 Topography and Meteorological Conditions

The Project site is located within the Mojave Desert Air Basin (MDAB). The topography and meteorology of the MDAB affects air quality by affecting the concentration and dispersion of air pollutants. The MDAB covers an assemblage of mountain ranges interspersed with long, broad valleys at elevations between 500 feet and 1,000 feet above mean sea level. These topographical barriers, along with a sub-tropical high-pressure system typically off the coast of California, effectively block the flow of moisture to the region. The climate of the MDAB is characterized by high daytime temperatures in the summer, large and rapid diurnal temperature changes, large variations in relative humidity, occasional high winds prevailing out of the west and southwest, and sand, dust, and thunderstorms. Summer rainfall is infrequent and local from monsoons and tropical storms.

### 3.2.2.2 Existing Air Quality

The federal and California Clean Air Acts both require the establishment of standards for ambient concentrations of the "criteria" air pollutants ozone ($O_3$), carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter (PM) [specifically, respirable particulate matter ($PM_{10}$) and fine particulate matter ($PM_{2.5}$)], and lead (Pb), to meet specific public health and welfare criteria. National Ambient Air Quality Standards (NAAQS) are established by USEPA, and California Air Quality Standards (CAAQS) are established by CARB and enforced by the local air district (e.g., MDAQMD). CAAQS are often more stringent than NAAQS for criteria pollutants, and CAAQS are also provided for hydrogen sulfide, vinyl chloride, and visibility reducing particles. The current NAAQS and CAAQS are provided in the Air Quality Report in Appendix H.1.

Specific geographic areas, such as air basins or portions thereof (e.g., MDAQMD), are classified as either "attainment" or "nonattainment" areas for the NAAQS or CAAQS for each criteria pollutant based on the comparison of recent measured air quality data in the air basin to the NAAQS or CAAQS. If the concentration of a criteria air pollutant in an air basin does not exceed its NAAQS or CAAQS, the area is designated as attainment of its NAAQS or CAAQS; if it exceeds, the area is designated as nonattainment. Where there is insufficient ambient data, the area is designated as "unclassified/attainment."

A portion of the MDAB is designated as a severe nonattainment area for ozone and as a moderate nonattainment area for $PM_{10}$. The Project site is located in the portion of the MDAB in eastern Riverside County, which is currently designated as attainment or unclassified of NAAQS and CAAQS for all criteria pollutants except

CAAQS for ozone and $PM_{10}$ (CARB 2019; USEPA 2018). Details on the MDAB's recent annual air pollutant concentrations and exceedances with the current NAAQS and CAAQS are provided in the Project's Air Quality report, in Appendix H.2. Indirect emissions associated with the Project would also be generated in the Salton Sea Air Basin (SSAB) and the South Coast Air Basin (SCAB), which are nonattainment of the NAAQS and CAAQS for ozone, the CAAQS for $PM_{10}$, and the NAAQS for $PM_{2.5}$. In addition, the SCAB is nonattainment of the CAAQS for $PM_{2.5}$, and the SSAB is nonattainment of the NAAQS for $PM_{10}$. The SSAB and SCAB are designated attainment or unclassified for the other criteria pollutants (CARB 2019; USEPA 2018).

### 3.2.2.3 Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include approximately 200 organic and inorganic chemical compounds, which may be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Diesel particulate emissions from diesel-fueled engines are the primary TACs of concern.

### 3.2.2.4 Sensitive Receptors

Air quality sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Therefore, schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air-quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, increasing the exposure duration. There are no sensitive receptors located within 2 miles of the Project site. The closest residence is the Chuckawalla Valley State Prison located approximately 2.9 miles west of the Project site.

### 3.2.2.5 Valley Fever

Valley Fever (formally known as Coccidioidomycosis) is an infectious disease caused by the fungi *Coccidioides immitis* or *C. posadasii*. Because it is currently unclear which species is predominant in the Blythe area, the term *Coccidioides* is used in this analysis to refer generally to fungal spores causing Valley Fever. Human infection results from inhalation of spores that have become airborne when dry, dusty soil or dirt is disturbed by wind, construction, farming, or other activities. Symptoms typically appear as a mild upper respiratory infection, acute bronchitis, or pneumonia. The most common symptoms are fatigue, cough, chest pain, fever, rash, headache, and joint aches, although 60 percent of people infected are asymptomatic and do not seek medical attention. In the remaining 40 percent, symptoms range from mild to severe (County of Los Angeles 2015).

Valley Fever fungi tend to be found in arid or semi-arid sandy alkaline soils, often rich in organic matter or salts, and may also be associated with rodent burrows and Native American middens (Barker et al. 2012). Sites that meet any of these conditions may have an increased chance that Valley Fever fungi are present, but presence is not guaranteed. The Project site soils exhibit some of these characteristics. The Carsitas, Rositas, and Buzzardsprings soils are arid, sandy, moderately alkaline soils; however, these soils have low organic matter content (0 to 0.5 percent) and are not characterized by high salinity (National Cooperative Soil Survey 2006, 2012a, 2012b). Soils are described further in Section 3.7, Geology and Soils.

According to the California Department of Public Health, reported suspect, probable, and confirmed cases of Valley Fever have steadily risen in recent years in Riverside County, and throughout California. In Riverside County alone, there were 40 cases in 2017, 81 cases in 2018, and 113 cases in 2019 through April. These cases represent approximately four percent of the total cases California-wide during that time period (CDPH 2019).

## 3.2.3 Analytical Methodology

The analysis of potential air resource-related impacts of the Project and alternatives is based on technical information about criteria pollutant emission estimates, public health risk, and cumulative impacts that would be generated during the construction, operation, maintenance, and decommissioning phases, and the implementation of mitigation that would avoid or minimize potential impacts.

The Air Quality Technical Report (AECOM 2019a) identified and quantified the emission sources of criteria air pollutants, TACs, and greenhouse gases (GHGs)[1] from the proposed Project. Emission calculations in the report are based on specific equipment and material throughput data provided by the Applicant, as well as emission factors from the several sources. Construction-related emissions for the Project were estimated using emission factors from the CARB's OFFROAD and EMFAC2014 inventory models (CARB 2013). The latest version of the EMFAC model for on-road vehicles is EMFAC2017. On August 15, 2019, the USEPA approved EMFAC2017 for emission evaluations related to the State Implementation Plan (SIP) or General Conformity purposes and announced that USEPA does not require EMFAC2017 to be used for projects that start before August 16, 2021. Construction emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying daily usage (i.e., hours per day) and total days of construction by OFFROAD equipment-specific emission factors. Emissions from on-road motor vehicles were estimated using vehicle trips, vehicle miles traveled, and EMFAC2014 mobile source emission factors. The emission factors represent the fleet-wide average emissions Riverside County. Grading, material loading, and travel on paved and unpaved roads would generate fugitive dust ($PM_{10}$ and $PM_{2.5}$) emissions, which were estimated using the USEPA's Compilation of Air Pollutant Factors (AP-42) and vehicle miles traveled on paved and unpaved roads, material loading, and hours of operation.

The assumptions, emission factors, calculations, and other data in the report were independently reviewed by the authors of the Final EIS and Proposed PA and determined to be acceptable for incorporation in this analysis with limited revisions to the construction emissions estimates as described above in Section 3.2.1, Introduction. Project emissions from the proposed construction, operation, and maintenance activities were calculated and then compared to the California Environmental Quality Act (CEQA) significance thresholds adopted by MDAQMD and SCAQMD.

### 3.2.3.1 Construction Emissions Estimates

Construction-related exhaust emissions for the Project were estimated for construction worker commutes, haul trucks, water trucks, and the use of off-road equipment. Emissions estimates are based on the proposed construction schedule and the required types and duration of use of equipment for the phases of Project construction.

The primary emission sources during Project construction would include exhaust from heavy construction equipment, on- and off-road vehicles, and fugitive dust generated in areas disturbed by grading, excavating, earth moving, and the movement of various construction vehicles around the site.

Fuel combustion emissions during construction would result from:

- Exhaust from the off-road construction equipment, including diesel construction equipment used for site grading, excavation, and installation of photovoltaic (PV) modules, and water trucks used to control construction dust emissions;
- Exhaust from on-road construction vehicles, including cement and water trucks used to transport materials and water between the Blythe local area and the construction site, and from diesel trucks used to deliver material, equipment, and construction supplies to the construction site from the Port of Los Angeles; and
- Exhaust from vehicles used by workers to commute to the construction site.

Fugitive dust emissions from the construction of the Project would result from:

- Site grading activities at the construction site;
- Installation of PV panel system foundation and related equipment installation;
- Installation of inverters, transformers, and substation electrical collector system;

[1] GHGs are discussed, and potential related impacts are analyzed, in Section 3.4, *Greenhouse Gas Emissions*.

- On-site vehicle and equipment travel on unpaved surfaces; and
- Off-site travel of worker vehicles and trucks on paved roads.

Project construction is anticipated to start in late 2020, and assumed to last 2 years. Construction activities would include site preparation and grading, and installation of the PV panels, inverters, transformers, substation, and electrical collector system. The estimated peak construction workforce is expected to generate up to 854 vehicle trips per day, assumed from within 13 miles of the Project site on average. In addition to commute trips by construction workers, approximately 41,575 truck deliveries of equipment, water, and materials were estimated to be required over the course of the construction period. Construction phase-related truck deliveries are estimated to require one-way distances as follows: equipment and material deliveries at 228 miles; and aggregate, water, and concrete deliveries at 13 miles. Equipment and materials, including the modules, trackers, and foundation structures, would arrive via truck trips from the Port of Los Angeles. Emissions from these trips have been estimated separately by the authors of the Final EIS and Proposed PA for the portion of the trips that would be occur within the MDAQMD jurisdictional boundary (i.e., 15 miles) and for the portion that would occur within the SCAQMD's jurisdictional boundary (i.e., 213 miles).[2] Concrete and water truck deliveries were assumed to be transporting material from the local Blythe area, completely within the MDAQMD jurisdictional boundary.

Project construction would occur within the approximately 2,500-acre area, and on-site soil cut-and-fill was assumed to be balanced. An approximate 2-mile travel distance on the Project's on-site roadway system was assumed and used for the on-site unpaved-road traveling emission calculation. Additional details, equipment lists, and construction scheduling information are provided in technical report in Appendix H.1.

#### *Operation and Maintenance Emissions Estimates*

After construction, emissions would be generated from operation and maintenance of the Project. Operation- and maintenance-related criteria pollutant emissions, including fugitive dust, would be generated from on-site equipment and on-site and off-site vehicle use. For the Project, operational and maintenance activities would include solar module washing; vegetation, weed, and pest management; and security. Maintenance activities would also include panel repairs; maintenance of transformers, inverters, and other electrical equipment as needed; and road and fence repairs. Similar to construction-related emission estimates, operational emissions were estimated using CARB's EMFAC2014 and USEPA AP-42 emission factors. Project-specific data provided by the Applicant (including water use data, vehicle trips, and building square footage) were used as input data.

The maximum number of staff on-site at any time would be 50 (40 temporary staff and 10 permanent staff), which would result in 100 daily trips to and from the Project site. It is assumed that staff would reside in the Blythe area. The perimeter road and main access roads would be surfaced with gravel, compacted dirt, or another commercially available surface and would accommodate Project operation and maintenance activities such as cleaning of solar panels, and facilitate on-site circulation for emergency vehicles. The expected annual demand for water was assumed to be approximately 22 acre-feet per year for process water, fire protection, dust control, vegetation management, water use at the operation and maintenance building, and the expected four solar module washings per year. These uses would require approximately 14 daily water trip deliveries to the Project site during the 75 days per year when panel washing would occur. Only limited deliveries would be necessary for replacement of PV modules and equipment during operation, thus heavy-duty off-road equipment is not expected to be used during operation of the Project. Additional details and assumptions are provided in Appendix H.1.

### 3.2.3.2 Public Health Risk

The primary TAC emissions that would be generated by the Project or one of the action alternatives would be diesel particulate matter (DPM) emissions from construction equipment and vehicle exhaust. Gasoline-fueled vehicles operating on-site during construction would emit small quantities of other TACs. The location of TAC

[2] The emissions that would be associated with equipment and materials deliveries from the Port of Los Angeles were estimated subsequent to the preparation of the AECOM report, which assumed all equipment and materials deliveries would occur within the MDAB with one-way trip lengths of 150 miles.

emissions from construction equipment would vary across the Project site over the construction and decommissioning periods, and thus, would not be in a fixed location for extended periods of time.

With regard to long-term operation and maintenance, on-site sources of TAC emissions primarily would be limited to vehicle use and periodic emergency standby generator testing. MDAQMD requirements for health risk assessments (HRAs) categorize project sites by land use type and define the distance from the Project site within which sensitive receptors must be considered for increased health risk. The Applicant is not required to prepare a full HRA for the Project because the Project site is a sufficient distance from the closest sensitive receptor (i.e., more than 1,000 feet); therefore, health risks associated with short-term construction activities and long-term operation and maintenance of the Project are evaluated qualitatively.

The following factors may indicate a project's potential to create Valley Fever impacts:

- Disturbance of the top soil of undeveloped land (to a depth of about 12 inches);
- Dry, alkaline, sandy soils;
- Virgin, undisturbed, non-urban areas;
- Windy areas;
- Archaeological resources probable or known to exist in the area (Native American midden sites);
- Special events (fairs, concerts) and motorized activities (motocross track, all-terrain vehicle activities) on unvegetated soil (non-grass); and
- Non-native population (i.e., out-of-area construction workers) (Ventura County Air Pollution Control District 2003).

This analysis uses the factors above that are applicable to the Project or the Project site to help the Lead Agencies determine whether the Project may create conditions that could lead to exposure to the spores that cause Valley Fever.

### 3.2.3.3 Decommissioning Emissions Estimates

It is assumed that decommissioning-related air pollutant emissions would be substantially similar to the construction-related emission estimates described above.

### 3.2.3.4 Impact Analysis

Independent of the National Environmental Policy Act (NEPA), federal Clean Air Act Section 176 requires federal agencies that are funding, permitting, or approving an activity to ensure the activity conforms to the applicable SIP adopted to eliminate or reduce air quality violations (42 USC Section 7506). The Project site is not located in a federal nonattainment area; however, the Project would result in indirect emissions associated with truck trips generated within the SSAB and SCAB, which include federal nonattainment areas for ozone, $PM_{10}$, and/or $PM_{2.5}$. Therefore, the federal Clean Air Act general conformity rules apply to Project emissions that would be generated within the SSAB and SCAB, which is under the jurisdiction of the SCAQMD, but would not apply to Project emissions generated within the MDAB. Although the Project site is located in an unclassified/attainment portion of MDAB relative to the NAAQS, the analysis conservatively compares the Project-related emissions that would be generated within the MDAB to the Clean Air Act conformity thresholds for maintenance areas (i.e., areas that currently meet federal air quality standards, but have violated the standards in prior years), which are 100 tons per year per pollutant. In addition, the estimated Project-related emissions that would be generated within the SSAB and SCAB, collectively within the jurisdiction of the SCAQMD, are compared to the conformity thresholds for extreme ozone nonattainment [10 tons per year for volatile organic compounds (VOC) and oxides of nitrogen (NOx)], serious $PM_{10}$ nonattainment (70 tons per year), and moderate $PM_{2.5}$ nonattainment (100 tons). These *de minimis* levels are used as measures for determining whether the Project could result in an exceedance of a NAAQS.

MDAQMD has developed quantitative significance thresholds for project emissions generated in its jurisdiction in their CEQA and Federal Conformity Guidelines (MDAQMD 2016) and the SCAQMD has developed CEQA significance thresholds in their CEQA Handbook for project emissions generated in its jurisdiction (SCAQMD 2019). The significance thresholds are shown in Table 3.2-1. BLM also uses these thresholds in the NEPA analysis to determine if the Project could result in an exceedance of a CAAQS.

**TABLE 3.2-1**
**MDAQMD AND SCAQMD REGIONAL SIGNIFICANCE THRESHOLDS**

| Pollutant | MDAQMD | | SCAQMD |
|---|---|---|---|
| | Annual Threshold (tons) | Daily Threshold (pounds) | Daily Threshold* (pounds) |
| CO | 100 | 548 | 550 |
| NOx | 25 | 137 | 55 |
| $PM_{10}$ | 15 | 82 | 150 |
| $PM_{2.5}$ | 12 | 65 | 55 |
| VOC | 25 | 137 | 55 |

NOTE: * The SCAQMD does not have annual significance thresholds for construction emissions.
SOURCE: MDAQMD 2016 and SCAQMD 2019

This analysis does not directly evaluate lead or $SO_x$ because little to no quantifiable and foreseeable emissions of these substances would be generated by the Project. Lead emissions have significantly decreased due to the near elimination of leaded fuel use. On- and off-road diesel fuel used in California must meet low-sulfur standards established by CARB; thus, $SO_x$ emissions due to diesel exhaust are assumed to be minimal.

## 3.2.4 Direct and Indirect Effects

### 3.2.4.1 Alternative A: Proposed Action

#### *Construction and Decommissioning*

**Criteria Pollutant Emissions**

The NEPA analysis is based on estimates of the total direct and indirect net emissions from the Project. The annual criteria pollutant emissions that would be generated within the jurisdictions of MDAQMD and SCAQMD during Project construction have been estimated by calendar year using the methodologies described above in Section 3.2.3. Table 3.2-2 summarizes the estimated annual criteria pollutant emissions that would be generated within the jurisdictions of MDAQMD and SCAQMD during construction of Alternative A.

As shown in Table 3.2-2, annual construction-related $PM_{10}$ emissions that would be generated within the jurisdiction of the MDAQMD would exceed the federal *de minimis* limit. Therefore, Project construction $PM_{10}$ emissions could result in an exceedance, or contribute to an exceedance, of the NAAQS for $PM_{10}$ and cause an adverse effect to air resources; however, as discussed above in Section 3.2.3.4, the Project emissions generated within the jurisdiction of the MDAQMD would not be subject to a General Conformity Determination because the Project site is not located in a federal nonattainment area. In addition, annual construction-related emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$ would exceed the MDAQMD thresholds for those pollutants, which could result in exceedances, or contribute to exceedances, of the ozone, $PM_{10}$, and $PM_{2.5}$ CAAQS and cause an adverse effect to air resources. To reduce annual Project construction emissions, implementation of Mitigation Measures AQ-1 through AQ-4 would be required (see Appendix B). Measures include implementation of a Dust Control Plan, adherence to Tier 4 Final California Emissions standards for all off-road equipment, construction equipment maintenance, and an idling policy which limits all diesel-powered off-road engines 2 minutes, which would be stricter than the 5-minute idling limitations required by CARB's Construction Equipment Idling regulation. When and if the Applicant secures the necessary approvals for the Project and selects a construction contractor, the specific logistics for construction and operation of the Project can be finalized and it would at that time be practicable and feasible for the Applicant to develop a detailed Dust Control Plan for the Project recommended by Mitigation Measure AQ-1. This would serve to further reduce emissions from diesel powered construction vehicles. With implementation of these mitigation measures, direct and indirect effects associated with maximum annual construction emissions would be reduced to below the federal *de minimis* limits and the MDAQMD thresholds, with the exception of $PM_{10}$, which would continue to exceed the MDAQMD threshold. Therefore, the associated effects relative to exceeding the NAAQS would not be adverse, but would be adverse relative to exceeding the CAAQS for $PM_{10}$.

**TABLE 3.2-2**
**ALTERNATIVE A ESTIMATED ANNUAL CONSTRUCTION EMISSIONS (TONS)**

| | | | | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Calendar Year** | **ROG** | **$NO_x$** | **CO** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** |
| **Emissions within the MDAQMD** | | | | | | | | | | | |
| 2020 | 0.4 | 4.0 | 3.0 | 0.2 | 1.0 | 7.3 | 8.6 | 0.2 | 0.6 | 0.6 | 1.3 |
| 2021 | 5.8 | 53.1 | 41.6 | 2.7 | 4.2 | 99.9 | 106.8 | 2.3 | 2.3 | 8.6 | 13.2 |
| 2022 | 3.3 | 29.7 | 23.6 | 1.5 | 1.4 | 56.4 | 59.4 | 1.3 | 0.8 | 4.9 | 7.0 |
| Maximum Annual | **5.8** | **53.1** | **41.6** | **2.7** | **4.2** | **99.9** | **106.8** | **2.3** | **2.3** | **8.6** | **13.2** |
| Federal *de minimis* levels | 100 | 100 | 100 | - | | - | 100 | - | | - | 100 |
| Exceed levels? | No | No | No | - | | - | **Yes** | - | | - | No |
| MDAQMD Thresholds | 25 | 25 | 100 | - | | - | 15 | - | | - | 12 |
| Exceed thresholds? | No | **Yes** | No | - | | - | **Yes** | - | | - | **Yes** |
| **Mitigated Maximum Annual*** | **2.3** | **20.3** | **48.2** | **1.0** | **1.7** | **20.5** | **23.1** | **0.7** | **0.9** | **2.0** | **3.6** |
| Exceeds Federal *de minimis* levels? | No | No | No | - | - | - | No | - | - | - | No |
| Exceeds MDAQMD thresholds? | No | No | No | - | - | - | **Yes** | - | - | - | No |
| **Emissions within the SCAQMD** | | | | | | | | | | | |
| **Maximum Annual** | **0.1** | **6.4** | **0.5** | **0.2** | **0.0** | **2.7** | **2.9** | **0.1** | **0.0** | **0.7** | **0.8** |
| Applicable Federal *de minimis* levels | 10 | 10 | 100 | - | - | - | 70 | - | - | - | 100 |
| Exceed levels? | No | No | No | - | - | - | No | - | - | - | No |

NOTE:
* Mitigated exhaust emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the Applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCES: AECOM 2019a and ESA 2020

As shown in Table 3.2-2, annual construction-related emissions that would be generated within the jurisdiction of the SCAQMD would not exceed the applicable federal *de minimis* limits. Therefore, the Project construction emissions generated within the SCAQMD jurisdiction would not result in an exceedance, or contribute to an exceedance, of the NAAQS; would not cause an adverse effect to air resources; and would not be subject to a General Conformity Determination.

Table 3.2-3 summarizes the estimated maximum daily criteria pollutant emissions that would be generated within the jurisdictions of MDAQMD and SCAQMD during Project construction and decommissioning. The construction period is estimated to start late 2020 and would last for approximately 23 months. The maximum daily emissions for all criteria pollutants would occur during the second and third calendar years of construction.

As shown in Table 3.2-3, maximum daily construction-related emissions of the ozone precursor $NO_x$, $PM_{10}$, and $PM_{2.5}$ that would be generated within MDAQMD's jurisdiction would exceed the MDAQMD daily thresholds, and maximum daily construction-related emissions of $NO_x$ that would be generated within SCAQMD's jurisdiction would exceed the SCAQMD daily threshold. Therefore, maximum daily construction emissions could result in an exceedance of the CAAQS for ozone, $PM_{10}$, and $PM_{2.5}$, which would result in an adverse effect on air resources. To reduce this impact, implementation of Mitigation Measures AQ-1 through AQ-4 would be required. Even with implementation of the mitigation measures, maximum daily emissions of $NO_x$ and $PM_{10}$ within the MDAQMD and maximum daily emissions of $NO_x$ within the SCAQMD would continue to exceed the thresholds and the residual impact on air resources would be adverse.

**TABLE 3.2-3**
**ALTERNATIVE A ESTIMATED MAXIMUM DAILY CONSTRUCTION AND DECOMMISSIONING EMISSIONS (LBS)**

| Calendar Year | ROG | $NO_x$ | CO | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total |
| **Emissions within the MDAQMD** | | | | | | | | | | | |
| 2020 | 12.9 | 133.8 | 93.8 | 6.4 | 31.8 | 396.3 | 434.4 | 5.3 | 17.5 | 34.5 | 57.3 |
| 2021 | 50.8 | 468.8 | 349.3 | 23.5 | 33.3 | 1,255.1 | 1,311.9 | 20.0 | 18.3 | 109.4 | 147.7 |
| 2022 | 50.8 | 468.8 | 349.3 | 23.5 | 33.3 | 1,255.1 | 1,311.9 | 20.0 | 18.3 | 109.4 | 147.7 |
| **Maximum Daily** | **50.8** | **468.8** | **349.3** | **23.5** | **33.3** | **1,255.1** | **1,311.9** | **20.0** | **18.3** | **109.4** | **147.7** |
| MDAQMD Daily Thresholds | 137 | 137 | 548 | - | - | - | 82 | - | - | - | 65 |
| Exceed thresholds? | No | **Yes** | No | - | - | **-** | **Yes** | - | - | **-** | **Yes** |
| **Mitigated Maximum Daily*** | **20.3** | **189.0** | **404.5** | **8.7** | **13.3** | **264.8** | **286.8** | **6.3** | **7.3** | **27.2** | **40.9** |
| Exceed thresholds? | No | **Yes** | No | - | - | **-** | **Yes** | - | - | - | No |
| **Emissions within the SCAQMD** | | | | | | | | | | | |
| **Maximum Daily** | 4.4 | 217.8 | 17.9 | 6.0 | 0.0 | 93.0 | 99.1 | 2.8 | 0.0 | 22.9 | 25.7 |
| SCAQMD Daily Thresholds | 75 | 100 | 550 | - | - | - | 150 | - | - | - | 55 |
| Exceed levels? | No | **Yes** | No | - | - | - | No | - | - | - | No |

NOTE:
* Mitigated emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCES: AECOM 2019a and ESA 2020

### Toxic Air Contaminants

MDAQMD requirements for quantitative health risk assessments categorize project sites by land use type and define the distance from the Project site within which sensitive receptors must be considered for increased health risk. The potential health risk impact radius for sensitive receptors near "any industrial project" is within 1,000 feet of the Project (MDAQMD 2011). Though solar power generation projects are not specifically identified as a type of industrial project, this worst-case radius was assumed as the criterion for determining potential risks from exposure to DPM during construction.

During construction, heavy-duty equipment would generate TAC emissions in the form of DPM. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for the Preparation of Health Risk Assessments (OEHHA 2015) which indicates that health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs. Construction would last approximately 23 months. Therefore, the total exposure period for construction activities would be approximately six percent of the total exposure period used for typical residential health risk calculations (i.e., 30 years). Further, construction emissions would occur intermittently throughout the day as equipment is used, rather than as a constant plume of emissions from the Project site.

In addition, concentrations of mobile source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet from freeways, which are continuous emission sources, and by 80 percent at 1,000 feet from distribution centers (CARB 2005). The Project site is located in open space, and the nearest sensitive receptor is a residence located over 2 miles from the Project site. Therefore, considering the construction schedule, substantial buffer distance to the nearest sensitive receptor, and the highly dispersive nature of DPM emissions, Project construction would not expose sensitive receptors to substantial pollutant concentrations.

#### Valley Fever

The Project site consists of undeveloped land with dry, alkaline, sandy soils where archaeological resources are known to exist (see Section 3.5, Cultural Resources). Thus for the reasons described in Section 3.2.2.5, the Project site has the potential to contain soils that contain *Coccidioides* spores. The spread of these spores can be contained by controlling Project dust emissions. The Project would be required to implement fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan). Adherence with MDAQMD Rule 403 and Mitigation Measure AQ-1 would minimize fugitive dust. Controlled construction practices to prevent fugitive dust make the spreading of Valley Fever to surrounding communities unlikely. Risk of exposure is further reduced by the Project's distance of about 2.9 miles to sensitive receptors.

On-site workers are the most at risk of contracting Valley Fever. The potential for exposure to on-site workers would be substantial. The effect on workers who were exposed could range from asymptomatic (60 percent) to the fever-like symptoms described above (County of Los Angeles 2015). However, when exposure to dust is unavoidable, employers must provide National Institute of Occupational Safety and Health (NIOSH)-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or high-efficiency particulate arrestance (HEPA), and employers must develop and implement a respiratory protection program in accordance with California's Occupational Safety & Health Administration's (Cal/OSHA) Respiratory Protection standard (8 CCR 5144). In addition, as stated earlier, MDAQMD Rule 403 and Mitigation Measure AQ-1 would ensure that fugitive dust and the potential spread of spores would be controlled on- and off-site. With these interventions, the risk of on-site workers contracting Valley Fever would be minor and short-term.

## *Operation and Maintenance*

### Criteria Pollutants

The Project is expected to generate up to 100 daily worker commute trips based on the maximum number of staff expected to be on-site at one time for maintenance activities, such as during solar module washing, which would occur four times each year using light utility vehicles with tow-behind water trailers. Table 3.2-4 summarizes projected annual operational emissions.

**TABLE 3.2-4**
**ALTERNATIVE A ESTIMATED ANNUAL OPERATION AND MAINTENANCE EMISSIONS (TONS)**

| Emissions Source | ROG | NOx | CO | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total |
| Operational Emissions | <0.01 | 0.1 | 0.1 | <0.1 | 6.3 | 0.0 | 6.3 | <0.1 | 1.0 | 0.0 | 1.0 |
| Federal de *minimis* levels | 100 | 100 | 100 | - | - | - | 100 | - | - | - | 100 |
| MDAQMD Thresholds | 25 | 25 | 100 | - | - | - | 15 | - | - | - | 15 |
| Exceed thresholds? | No | No | No | - | - | - | No | - | - | - | No |
| Mitigated Emissions | <0.01 | 0.1 | 0.1 | <0.1 | 2.8 | 0.0 | 2.8 | <0.1 | 0.5 | 0.0 | 0.5 |
| Exceeds Threshold? | No | No | No | - | - | - | No | - | - | - | No |

NOTES: Mitigated fugitive dust emissions include reductions based on treating permanent unpaved roads per Mitigation Measure AQ-1. Additional details on the emissions are included in Appendix H.1. Appendix H.1 notes for Table 8 suggest that the operational fugitive dust emissions presented are controlled or mitigated; however, further review of the detailed operational fugitive dust emissions at the back of Appendix H.1 indicate that those Table 8 notes are incorrect and that the emissions actually represented uncontrolled emissions. Therefore, subsequent to the release of the Draft EIS/EIR/PA, $PM_{10}$ and $PM_{2.5}$ emissions have been revised to accurately reflect the emissions calculations in Appendix H.1, and these notes have been added to clarify that the Appendix H.1 Table 8 emissions are uncontrolled.

SOURCE: AECOM 2019a.

As shown in Table 3.2-4, the estimated annual operational emissions would not exceed the annual federal *de minimis* levels or the MDAQMD thresholds; however, the estimated fugitive dust emissions would be within one ton of the annual significance threshold of 15 tons $PM_{10}$. Therefore, to ensure that Project-generated visible fugitive dust plumes are prevented from leaving the site during operation and maintenance, Mitigation Measure AQ-1 (Dust Control Plan) is also applicable to Project operation and maintenance. Annual Project operational emissions would not result in or contribute to an exceedance of a NAAQS or a CAAQS. Table 3.2-5 summarizes the projected maximum daily operational emissions.

**TABLE 3.2-5**
**ALTERNATIVE A ESTIMATED MAXIMUM DAILY OPERATION AND MAINTENANCE EMISSIONS (LBS)**

| Emissions Source | ROG | NOx | CO | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total |
| Operational Emissions | 0.1 | 3.7 | 2.4 | 0.2 | 77.0 | 0.0 | 77.2 | 0.1 | 11.6 | 0.0 | 11.7 |
| MDAQMD Thresholds | 137 | 137 | 548 | - | - | - | 82 | - | - | - | 65 |
| Exceed thresholds? | No | No | No | - | - | - | No | - | - | - | No |
| Mitigated Emissions | 0.1 | 3.7 | 2.4 | 0.2 | 34.7 | 0.0 | 34.9 | 0.1 | 5.2 | 0.0 | 5.3 |
| Exceeds Threshold? | No | No | No | - | - | - | No | - | - | - | No |

NOTE: Fugitive dust emissions include reductions based on treating permanent unpaved roads per Mitigation Measure AQ-1. Additional details on the emissions for each calendar year are included in Appendix H.1

SOURCE: AECOM 2019a.

As shown in Table 3.2-5, the Project's estimated daily operational emissions would not exceed the MDAQMD's daily thresholds; however, the estimated fugitive dust emissions would be within 5 pounds of the maximum daily significance threshold of 15 tons $PM_{10}$. Therefore, to ensure that Project-generated visible fugitive dust plumes are prevented from leaving the site during operation and maintenance, Mitigation Measure AQ-1 (Dust Control Plan), is also applicable to Project operation and maintenance. Daily operational emissions would not result in or contribute to an exceedance of a CAAQS. With implementation of Mitigation Measure AQ-1, long-term operations would not result in an adverse direct or indirect effect on air resources.

#### Toxic Air Contaminants

Operation and maintenance emissions primarily would result from approximately 100 daily off-site worker commute trips and on-site vehicle use associated with solar module washing and other maintenance. Operations would not routinely use heavy-duty off-road equipment that generates DPM. On-site operational emissions would be dispersed over the site, resulting in very low pollutant concentrations at nearby residences (over 2 miles away). Therefore, DPM emissions exposure would present little risk during operation and maintenance.

#### General Conformity Applicability

The Project site is not located in a federal nonattainment area, and operational emissions would be limited to the area of the Project and Blythe, and so a formal conformity analysis is not required.

## 3.2.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2 and DE-3 in Table 3.2-6) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.2-6 summarizes the change in air quality impacts under Alternative B, by Design Element.

**TABLE 3.2-6**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/ Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Air Quality | Minor reduction in construction emissions.<br>Operations and Decommissioning would result in no change | Minor reduction in construction emissions.<br>Operations and Decommissioning would result in no change | Minor reduction. Operations and Decommissioning would result in no change |
| Valley Fever | Minor reduction | Minor reduction | Minor reduction |
| Toxic Air Contaminants | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Construction and Decommissioning*

Alternative B would incorporate Design Elements that would substantially reduce grading, trenching, and vegetation removal during construction. Similar to Alternative A, construction would occur in three phases, including site preparation and grading, PV system installation, and installation of inverters, transformers, and substation electrical collector system.

While the total amount of grading in the solar arrays would be the same as for Alternative A, the preparation of the inverter/transformer equipment areas would not be graded. For the purpose of estimating emissions, it is assumed that only two graders and two scrapers would be required during Phase 1 of construction compared to three graders and three scrapers required for the Project. In addition, overhead cables would be installed on up to 1,000 wooden transmission poles to convey the DC electricity from each row of modules to the inverters/transformers. Under Alternative B, Phase 3 would also result in an overall lesser amount of ground disturbance for underground cables compared to Alternative A, but would result in greater overhead pole installation activity compared to Alternative A. For the purpose of estimating emissions, it is assumed that only four backhoe/excavators, up to six augers and up to seven cranes would be required during Phase 3 of Alternative B construction compared to six backhoe/excavators, five augers, and six cranes that would be required for Alternative A. Tables 3.2-7 and 3.2-8 present the maximum annual and maximum daily construction emissions estimates that would be generated within MDAQMD’s jurisdiction, respectively, for Alternative B based on calculations for Alternative A presented in Appendix H.3 with the equipment assumption adjustments for Alternative B described above (ESA 2020).

Maximum annual and maximum daily emissions that would be generated in SCAQMD's jurisdiction under Alternative B are the same as for Alternative A (refer to Table 3.2-2 and Table 3.2-3).

**TABLE 3.2-7**
**ESTIMATED MAXIMUM ANNUAL CONSTRUCTION EMISSIONS FOR ALTERNATIVE B (TONS)**

| | | | | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Emissions** | **ROG** | **NOx** | **CO** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** |
| Maximum Annual for MDAQMD | 5.7 | 51.6 | 40.0 | 2.2 | 3.4 | 99.9 | 105.5 | 2.0 | 1.9 | 8.6 | 12.5 |
| Federal *de minimis* levels | 100 | 100 | 100 | - | - | - | 100 | - | - | - | 100 |
| Exceed levels? | No | No | No | - | - | **-** | **Yes** | - | - | - | No |
| MDAQMD Thresholds | 25 | 25 | 100 | - | - | - | 15 | - | - | - | 12 |
| Exceed thresholds? | No | **Yes** | No | **-** | **-** | **-** | **Yes** | - | - | **-** | **Yes** |
| Mitigated Maximum Annual* | 2.3 | 20.2 | 47.6 | 1.0 | 1.4 | 20.5 | 22.6 | 0.7 | 0.7 | 2.0 | 3.3 |
| Exceed *de minimis* levels or MDAQMD thresholds? | No | No | No | - | - | **-** | **Yes** | | - | - | No |
| Percent reduction compared to Alternative A | 1.7% | 2.8% | 3.9% | 18.5% | 19.1% | **n/a** | **1.2%** | 13.0% | 17.4% | n/a | 5.3% |

NOTES:
* Mitigated exhaust emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCE: AECOM 2019a and ESA 2020

**TABLE 3.2-8**
**ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS FOR ALTERNATIVE B (LBS)**

| | | | | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Emissions** | **ROG** | **NOx** | **CO** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** |
| Maximum Daily for the MDAQMD | 50.2 | 461.8 | 345.8 | 23.8 | 22.8 | 1,255.1 | 1,301.1 | 20.3 | 12.5 | 109.4 | 141.6 |
| MDAQMD Thresholds | 137 | 137 | 548 | - | - | - | 82 | - | - | - | 65 |
| Exceed thresholds? | No | **Yes** | No | **-** | **-** | **-** | **Yes** | **-** | **-** | **-** | **Yes** |
| Mitigated Maximum Daily* | 20.2 | 188.7 | 401.1 | 8.7 | 9.1 | 264.8 | 282.6 | 6.3 | 5.0 | 27.20 | 38.6 |
| Exceed thresholds? | No | **Yes** | No | | | | **Yes** | | | | No |

NOTES:
* Mitigated exhaust emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCE: AECOM 2019a and ESA 2020

Alternative B would include a net reduction in grading- and trenching-related emissions for Phases 1 and 3 compared to Alternative A, but it would result in greater overhead pole installation activity during Phase 3 compared to Alternative A. In addition, it is assumed that Alternative B and Alternative A would have the same construction schedule, with the exception that construction of Alternative B would conclude 6 months prior to the end of construction under Alternative A. Although the annual emissions in 2022 would be substantially reduced under Alternative B due to the reduced duration of construction, maximum annual construction emissions in 2021 for Alternative B would be similar to those for Alternative A because the emission reductions associated with the reduced earth moving equipment (e.g., scraper, grader) would be partially offset by the increased use of cranes. As shown in Tables 3.2-7 and 3.2-2, annual construction-related emissions generated within the MDAQMD and SCAQMD, respectively, would not exceed the federal *de minimis* limits with the exception of $PM_{10}$ generated within the MDAQMD jurisdiction. Therefore, annual construction emissions under Alternative B could result in an exceedance, or contribute to an exceedance, of the $PM_{10}$ NAAQS. In addition, annual construction-related emissions of Alternative B would exceed the MDAQMD thresholds for $NO_x$, $PM_{10}$, and $PM_{2.5}$, which could cause or contribute to exceedances of the ozone, $PM_{10}$, and $PM_{2.5}$ CAAQS and result in an adverse effect on air resources. To reduce annual construction emissions of Alternative B, implementation of Mitigation Measures AQ-1 through AQ-4 would be required (see Appendix B). Measures include implementation of a Dust Control Plan, adherence to Tier 4 Final California Emissions standards for all off-road equipment, construction equipment maintenance, and an idling policy which limits all diesel-powered off-road engines 2 minutes, which would be stricter than the 5-minute idling limitations required by CARB's Construction Equipment Idling regulation. This would serve to further reduce emissions from diesel powered construction vehicles. With implementation of these mitigation measures, direct and indirect effects associated with maximum annual construction emissions of $NO_x$ and $PM_{2.5}$ would be reduced to below the MDAQMD thresholds, but emissions of $PM_{10}$ would continue to exceed the threshold, resulting in a residual effect on air resources, relative to exceeding the $PM_{10}$ CAAQS, that would be adverse.

As shown in Table 3.2-8, Alternative B's maximum daily construction-related emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$ generated within the MDAQMD jurisdiction would be slightly reduced compared to the Project, but would still exceed the MDAQMD's daily thresholds. Maximum daily construction-related emissions associated with Alternative B generated within the SCAQMD jurisdiction would be the same as for the Project, and would exceed the SCAQMD's daily threshold for $NO_x$. Therefore, the maximum daily construction emissions could result in an exceedance of a CAAQS within both jurisdictions, and the impact would be adverse. To minimize this impact, implementation of Mitigation Measures AQ-1 through AQ-4 would be required, which would reduce the maximum daily emissions, but emissions of $NO_x$ and $PM_{10}$ would continue to exceed the MDAQMD thresholds, and the residual impact on air resources relative to exceeding the ozone and $PM_{10}$ CAAQS would be adverse. Maximum daily emissions of $NO_x$ within the SCAQMD jurisdiction would continue to exceed the threshold. The residual impact on air resources within both of the jurisdictions would be adverse.

Impacts involving the spread of Valley Fever would be reduced compared to Alternative A because Alternative B would involve less construction earthmoving activities at the Project site; however, fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) would also be required under Alternative B. Compliance with MDAQMD Rule 403 and Mitigation Measure AQ-1 would ensure that fugitive dust and the spread of *Coccidioides* spores would be minimized.

### *Operation and Maintenance*

Operational emissions for Alternative B would be similar to the operational emissions estimated for Alternative A. As shown in Tables 3.2-4 and 3.2-5, the estimated operational emissions would not exceed the *de minimis* levels or MDAQMD thresholds. Therefore, operational emissions of Alternative B would not violate an ambient air quality standard or contribute substantially to an existing violation.

#### Toxic Air Contaminants and Valley Fever

The construction of Alternative B would be similar to Alternative A. Operation and maintenance would result in a negligible amount of DPM emissions primarily associated with on-site water truck usage. These emissions would be dispersed over the site resulting in very low pollutant concentrations at the nearest residence locations.

Therefore, DPM emissions exposure would present little risk during operation and maintenance. Fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) would ensure that fugitive dust would be minimized. Controlled construction practices to prevent fugitive dust make the spreading of Valley Fever to surrounding communities that are more than 2.9 miles from the site unlikely, and when worker exposure to dust is unavoidable, employers must provide workers with NIOSH-approved respiratory protection with particulate filters. In addition, and employers must also develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144). This would minimize the potential impact on on-site workers under Alternative B.

#### General Conformity Determination

The site is not located in a federal nonattainment area; however, Alternative B would generate the same amount of on-road emissions as Alternative A within the jurisdiction of SCAQMD, which has NAAQS nonattainment areas for ozone, $PM_{10}$, and $PM_{2.5}$. As shown in Table 3.2-2, annual construction-related emissions would not exceed the applicable federal de minimis limits. Therefore, annual construction emissions generated within the SCAQMD jurisdiction under Alternative B would not result in an exceedance, or contribute to an exceedance, of a NAAQS, and would not be subject to a General Conformity Determination.

## 3.2.4.3 Alternative C: Reduced Acreage Alternative

### *Construction and Decommissioning*

Alternative C would reduce the developed acreage from 2,500 to 2,040 acres, resulting in a slight decrease in earthwork and material movement. Since on-site cut-and-fill was assumed to be balanced and construction equipment usage and material delivery trips are anticipated to remain the same as Alternative A, Alternative C primarily would result in slight changes to the fugitive dust (particulate matter) emissions during construction. Like Alternative A, construction would occur in three phases, including site preparation and grading, PV system installation, and installation of inverters, transformers, and a substation electrical collector system. This alternative would consist of two units: Unit 1, a solar facility; and Unit 2, an Energy Storage System. The two units could operate independently of each other and may be constructed in different time periods. The analysis below is presented first in terms of the consolidated alternative, including development of both Units 1 and 2, and then based on the assumption that either Unit 1 or Unit 2 would be developed, but not both.

#### Consolidated Alternative C

For the purposes of this analysis, the schedule start date, work force, and equipment requirements for Alternative C are assumed to be the same as for Alternative A. Therefore, the maximum annual and maximum daily construction emissions would also be the same as with Alternative A, as shown in Tables 3.2-2 and 3.2-3, respectively. However, given the reduced amount of acreage associated with Alternative C, it is anticipated that Alternative C would take approximately three fewer months to construct compared to Alternative A, and would therefore have reduced emissions in 2022. The maximum annual emissions generated within the jurisdiction of MDAQMD would exceed the annual *de minimis* level for $PM_{10}$, and they would exceed the MDAQMD thresholds for $NO_x$, $PM_{10}$, and $PM_{2.5}$, and the maximum daily construction-related emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$ would exceed the MDAQMD daily thresholds and the SCAQMD threshold for $NO_x$, resulting in net increases of criteria pollutants that could result in or contribute to exceedances of the NAAQS and CAAQS. To minimize this impact, implementation of Mitigation Measures AQ-1 through AQ-4 would be required. Measures include implementation of a Dust Control Plan, adherence to Tier 4 Final California Emissions standards for all off-road equipment, construction equipment maintenance, and an idling policy which limits all diesel-powered off-road engines 2 minutes, which would be stricter than the 5-minute idling limitations required by CARB's Construction Equipment Idling regulation. This would further reduce emissions from diesel powered construction vehicles. The mitigation measures would reduce the maximum annual emissions generated within the jurisdiction of MDAQMD to below the federal *de minimis* thresholds, but $PM_{10}$ emissions would continue to exceed the MDAQMD's annual threshold. In addition, the mitigation measures would also reduce the maximum daily emissions generated within the jurisdiction of MDAQMD, but daily emissions of $NO_x$ and $PM_{10}$ would continue to exceed the MDAQMD daily thresholds and daily emissions of $NO_x$ generated within the jurisdiction of SCAQMD would continue to exceed the SCAQMD daily threshold. The residual impact in both jurisdictions on air resources relative to exceeding the CAAQS would be adverse.

### Unit 1 or Unit 2 Only

Tables 3.2-9 and 3.2-10 present the maximum annual and maximum daily construction emissions estimates that would be generated within MDAQMD's and SCAQMD's jurisdiction, respectively, for Alternative C Units 1 and 2 based on calculations for Alternative A presented in Appendix H.3 (ESA 2020). As discussed above, it is anticipated that the consolidated Alternative C would take approximately three fewer months to construct compared to Alternative A, and would therefore have reduced emissions in 2022; however, the maximum annual and maximum daily construction emissions would be the same as for Alternative A. To estimate the maximum annual and maximum daily emissions for each unit, assumptions were developed relative to the percent of the overall emissions that would be associated with Units 1 and 2.

**TABLE 3.2-9**
**ESTIMATED MAXIMUM ANNUAL CONSTRUCTION EMISSIONS FOR ALTERNATIVE C UNITS 1 AND 2 (TONS)**

| | | | | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Emissions** | **ROG** | **NOx** | **CO** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** | **Exhaust** | **On-site Fugitive Dust** | **Off-site Fugitive Dust** | **Total** |
| Unit 1 Maximum Annual for MDAQMD | 4.7 | 42.1 | 33.5 | 2.2 | 3.7 | 84.4 | 90.2 | 1.9 | 2.0 | 7.2 | 11.1 |
| Federal *de minimis* levels | 100 | 100 | 100 | - | - | - | 100 | - | - | - | 100 |
| Exceed levels? | No | No | No | - | - | - | No | - | - | - | No |
| MDAQMD Thresholds | 25 | 25 | 100 | - | - | - | 15 | - | - | - | 12 |
| Exceed thresholds? | No | **Yes** | No | - | - | - | **Yes** | - | - | - | No |
| Mitigated Maximum Annual* | 1.9 | 16.8 | 38.8 | 0.8 | 1.5 | 17.3 | 19.6 | 0.6 | 0.8 | 1.7 | 3.1 |
| Exceed *de minimis* levels or MDAQMD thresholds? | No | No | No | - | - | - | **Yes** | - | - | - | No |
| Unit 2 Maximum Annual for MDAQMD | 1.2 | 12.9 | 9.1 | 0.6 | 0.5 | 16.1 | 17.2 | 0.5 | 0.3 | 1.4 | 2.2 |
| Federal *de minimis* levels | 100 | 100 | 100 | - | - | - | 100 | - | - | - | 100 |
| Exceed levels? | No | No | No | - | - | - | No | - | - | - | No |
| MDAQMD Thresholds | 25 | 25 | 100 | - | - | - | 15 | - | - | - | 12 |
| Exceed thresholds? | No | No | No | - | - | - | **Yes** | - | - | - | No |
| Mitigated Maximum Annual* | 0.4 | 3.8 | 10.9 | 0.2 | 0.2 | 3.3 | 3.7 | 0.1 | 0.1 | 0.3 | 0.6 |
| Exceed *de minimis* levels or MDAQMD thresholds? | No | No | No | - | - | - | No | - | - | - | No |

NOTES:
* Mitigated exhaust emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCE: ESA 2020, based on AECOM 2019a

**TABLE 3.2-10**
**ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS FOR ALTERNATIVE C UNITS 1 AND 2 (LBS)**

| Emissions | ROG | NOx | CO | $PM_{10}$ | | | | $PM_{2.5}$ | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total | Exhaust | On-site Fugitive Dust | Off-site Fugitive Dust | Total |
| **Emissions within the MDAQMD** | | | | | | | | | | | |
| Unit 1 Maximum Daily | 39.5 | 361.0 | 269.5 | 18.4 | 29.3 | 1,087.7 | 1,135.3 | 15.6 | 16.0 | 94.3 | 125.9 |
| MDAQMD Thresholds | 137 | 137 | 548 | - | - | - | 82 | - | - | - | 65 |
| Exceed thresholds? | No | **Yes** | No | - | - | - | **Yes** | - | - | - | **Yes** |
| Mitigated Maximum Daily* | 16.1 | 152.2 | 313.3 | 7.1 | 11.7 | 226.8 | 245.6 | 5.2 | 6.4 | 22.9 | 34.5 |
| Exceed thresholds? | No | **Yes** | No | | | | **Yes** | | | | No |
| Unit 2 Maximum Daily | 12.3 | 119.5 | 86.3 | 5.6 | 4.1 | 173.7 | 183.4 | 4.9 | 2.3 | 15.7 | 22.8 |
| MDAQMD Thresholds | 137 | 137 | 548 | - | - | - | 82 | - | - | - | 65 |
| Exceed thresholds? | No | No | No | - | - | - | **Yes** | - | - | - | No |
| Mitigated Maximum Daily* | 4.5 | 39.0 | 100.4 | 1.6 | 1.7 | 39.4 | 42.7 | 1.2 | 0.9 | 4.6 | 6.7 |
| Exceed thresholds? | No | No | No | - | - | - | No | - | - | - | No |
| **Emissions within the SCAQMD** | | | | | | | | | | | |
| Unit 1 Maximum Daily | 4.1 | 203.4 | 16.8 | 5.6 | 0.0 | 87.0 | 92.6 | 2.6 | 0.0 | 21.4 | 24.0 |
| SCAQMD Daily Thresholds | 75 | 100 | 550 | - | - | - | 150 | - | - | - | 55 |
| Exceed levels? | No | **Yes** | No | - | - | - | No | - | - | - | No |
| Unit 2 Maximum Daily | 0.3 | 14.7 | 1.2 | 0.4 | 0.0 | 6.3 | 6.7 | 0.2 | 0.0 | 1.5 | 1.7 |
| SCAQMD Daily Thresholds | 75 | 100 | 550 | - | - | - | 150 | - | - | - | 55 |
| Exceed levels? | No | No | No | - | - | - | No | - | - | - | No |

NOTES:

* Mitigated exhaust emissions assume 85 percent of off-road equipment that would be used onsite would have Tier 4-compliant engines. This is based on a survey of equipment companies conducted by the applicant on the availability of Tier 4 engines. Mitigated exhaust emissions were estimated by the authors of the Final EIS and Proposed PA subsequent to the preparation of the AECOM report, which assumed that all equipment would be Tier 4 compliant with the exception of all-terrain vehicles (ATVs). Regarding the Mitigation Measure AQ-2 requirements for on-highway vehicles, it is not known whether or not on-highway trucks used for hauling would be under the direct control of the applicant or the construction contractor, or if Project-related hauling would be conducted by third-party haulers; therefore, the mitigated maximum annual emissions do not reflect reductions associated with on-highway vehicles.

SOURCE: ESA 2020, based on AECOM 2019a

Based on the overall area of Unit 2 (i.e., 85 acres), relative to the disturbance area of Unit 2 (i.e., 990 acres; based on 2,500 acres for Alternative A, minus 85 acres for Unit B, multiplied by 50 percent disturbance for Alternative A, and multiplied by 82 percent for the disturbance of Alternative C relative to Alternative A), the overall Phase 1 emissions for Unit 1 would be approximately 91 percent of the Phase 1 emissions for Alternative A, and the overall Phase 1 emissions for Unit 2 would be approximately 9 percent of the Phase 1 emissions for Alternative A. With the exception of emissions that would be common to both Units 1 and 2 associated with paving equipment and rollers for construction of the paved road from Powerline Road, the Phase 2 emissions are exclusively associated with Unit 1. When considering the areas of the battery energy storage system facility, the energy storage substation, the solar substation, and the switch yard that would be common to both Units 1 and 2, the Phase 3 emissions for Unit 1 would be approximately 11 percent of the Phase 3 emissions for Alternative A, and the overall Phase 3 emissions for Unit 2 would be approximately 93 percent of the Phase 3 emissions for Alternative A.

Due to the facilities that would be common to both Units 1 and 2 (i.e., facilities required regardless of unit), there is some overlap in emissions; therefore, the emissions presented in Tables 3.2-9 and 3.2-10 for Units 1 or 2 combine to amounts that slightly exceed the emissions that would be associated with the consolidated Alternative C. Refer to revised Appendix H3 for the calculations associated with the emission estimates for Units 1 and 2.

The maximum annual emissions for Unit 1 would exceed the annual MDAQMD thresholds for $NO_x$ and $PM_{10}$, and the maximum daily construction-related emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$ would exceed the MDAQMD daily thresholds and the SCAQMD threshold for $NO_x$, resulting in net increases of criteria pollutants that could result in or contribute to exceedances of the NAAQS and CAAQS. To minimize these impacts, implementation of Mitigation Measures AQ-1 through AQ-4 would be required. The mitigation measures would reduce the maximum annual Unit 1 $NO_x$ emissions generated within the jurisdiction of MDAQMD to below the MDAQMD's annual threshold, but $PM_{10}$ emissions would continue to exceed the MDAQMD's annual threshold. Mitigated maximum daily Unit 1 $PM_{2.5}$ emissions would be reduced to below the MDAQMD significance threshold, but daily emissions of $NO_x$ and $PM_{10}$ would continue to exceed the MDAQMD thresholds. The residual air resources impact in both jurisdictions associated with Unit 1 would be adverse.

The emissions for Unit 2 would exceed the maximum annual and daily MDAQMD thresholds for $PM_{10}$, resulting in net increases of criteria pollutants that could result in or contribute to exceedances of the NAAQS and CAAQS. All other air pollutants generated within the MDAQMD and SCAQMD associated with Unit 2 would be less than the significance thresholds and de minimus levels. To minimize the significant $PM_{10}$ impact, implementation of Mitigation Measures AQ-1 through AQ-4 would be required. The mitigation measures would reduce the maximum annual Unit 2 $PM_{10}$ emissions generated within the jurisdiction of MDAQMD to below the MDAQMD's thresholds. The residual air resources impact in both jurisdictions associated with Unit 2 would not be adverse.

#### Valley Fever

Impacts involving the spread of Valley Fever would be reduced compared to Alternative A, because Alternative C would involve a reduced-acreage site and associated reduced construction earthmoving activities. However, implementation of fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) would also be required. Compliance with MDAQMD Rule 403 and Mitigation Measure AQ-1 would ensure that the spread of *Coccidioides* spores would be minimized.

### *Operation and Maintenance*

The Project, both with or without the acreage reduction, would include an on-site operation and maintenance building. Therefore, operational emissions for Alternative C would be similar to the operational emissions estimated for the Project. As shown in Tables 3.2-4 and 3.2-5, the estimated operational emissions of Alternative A would not exceed the annual *de minimis* levels or the annual or daily MDAQMD thresholds. Therefore, the combined operational emissions of Alternative C Units 1 and 2, as well as the emissions for the individual Units 1 and 2, would not violate an ambient air quality standard or contribute substantially to an existing violation.

#### Toxic Air Contaminants and Valley Fever

The construction of Alternative C would be similar to Alternative A. Operation and maintenance would result in a negligible amount of DPM emissions, primarily associated with on-site water truck use, which would be dispersed over the site, resulting in very low pollutant concentrations at nearby residence locations. Therefore, DPM emissions exposure would present little risk during operation and maintenance. Fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) would ensure that fugitive dust would be minimized. Controlled construction practices to prevent fugitive dust make the spreading of Valley Fever to surrounding communities that are more than 2.9 miles from the site unlikely, and when worker exposure to dust is unavoidable, employers must provide workers with NIOSH-approved respiratory protection with particulate filters. In addition, employers must also develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144). This would minimize the potential impact on on-site workers under Alternative C.

#### General Conformity Determination

The site is not located in a federal nonattainment area; however, the consolidated Alternative C would generate the same amount of on-road emissions as Alternative A within the jurisdiction of SCAQMD, which has NAAQS nonattainment areas for ozone, $PM_{10}$, and $PM_{2.5}$. As shown in Table 3.2-2, annual construction-related emissions that would be generated within the SCAQMD jurisdiction would not exceed the applicable federal de minimis limits. Therefore, annual construction emissions under the consolidated Alternative C, as well as for the individual Units 1 and 2, would not result in an exceedance, or contribute to an exceedance, of a NAAQS, and would not be subject to a General Conformity Determination.

### 3.2.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

As described in Section 2.6.1, Alternative D would result in no development on the Project site. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would result in no changes to existing air resources; therefore, no impact would occur.

## 3.2.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on Air Resources if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the air basin is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leasing to odors) adversely affecting a substantial number of people.

### 3.2.5.1 Alternative A: Proposed Action

**Impact 3.2.5a: Would the Project conflict with or obstruct implementation of the applicable air quality plan? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain federal and state air quality standards into compliance with those standards pursuant to the requirements of the federal Clean Air Act and the California Clean Air Act. Projects that are consistent with the assumptions and control measures used in development of the applicable air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan.

The applicable air quality plans for the Project are prepared by MDAQMD, which has adopted a variety of attainment plans for the pollutants that are in nonattainment in the region, such as the 2004 state and federal Ozone Attainment Plan and the 1996 Maintenance Plan for $PM_{10}$.

Project construction would involve the use of off-road equipment, haul trucks, and worker commute vehicles. The Project would not increase the assumptions for the hours of activity and equipment population reported to CARB for rule compliance. Therefore, while the Project would generate criteria pollutant emissions, the approach to exhaust and fugitive dust emission control measures would not conflict with or obstruct implementation any applicable air quality plan.

Based on the maximum of 50 staff on-site at any time, operation and maintenance activities would generate approximately 100 motor vehicle trips per day. The Project does not involve any uses that would increase population beyond that considered in the Riverside County General Plan, and does not include the construction of new residential or commercial buildings; therefore, it would not directly increase the regional population.

Because the Project would be consistent with the assumptions regarding equipment activity and emissions in the SIP and existing planning documents, it is expected that the intensity of construction and operational emissions associated with the Project would have been accounted for in any applicable air quality plan. Because the Project would comply with all construction-related MDAQMD rules and regulations and would be consistent with the BLM land use classifications and planning documents, the Project would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.2.5b: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard)? (*Significant and unavoidable*)**

### Construction

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable contribution of emissions to the region. Per CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Project's incremental effects are cumulatively considerable.

The Project site is located in the eastern Riverside County portion of the MDAB, which is currently designated as attainment of NAAQS and CAAQS for all criteria pollutants, except CAAQS for ozone and $PM_{10}$. The Project would also result in indirect emissions associated with truck trips generated within the SSAB and SCAB, which include NAAQS and CAAQS nonattainment areas for ozone, $PM_{10}$, and/or $PM_{2.5}$. As discussed earlier, the Project would result in the generation of $NO_x$, $PM_{10}$, and $PM_{2.5}$ emissions within the MDAQMD at levels that would exceed the MDAQMD-recommended significance thresholds for construction activities and would generate $NO_x$ emissions within the SCAQMD that would exceed the SCAQMD-recommended significance threshold. These thresholds are designed to identify those projects that would result in significant levels of air pollution and that would assist the region in attaining the applicable state and federal ambient air quality standards. When a project generates emissions that exceed these significance thresholds, it is considered to impede attainment and maintenance of ambient air quality standards.

Because the Project would exceed the project-level air quality significance thresholds for criteria pollutant emissions, the Project's construction emissions would have a cumulatively considerable contribution to the existing significant cumulative impact on the region's air quality. Implementation of Mitigation Measures AQ-1 through AQ-4 would ensure that construction would minimize criteria pollutant emissions to the extent feasible. Measures include implementation of a Dust Control Plan, adherence to Tier 4 Final California Emissions standards for all off-road equipment, construction equipment maintenance, and an idling policy which limits all diesel-powered off-road engines to 2 minutes, which would be stricter than the 5-minute idling limitations required by CARB's Construction Equipment Idling regulation. This would further reduce emissions from diesel powered construction vehicles. Tables 3.2-2 and 3.2-3 show the mitigated maximum annual and maximum daily emissions, respectively, for Project construction activities. Maximum annual mitigated emissions of $PM_{10}$ and daily mitigated emissions of $NO_x$ and $PM_{10}$ that would be generated within the MDAQMD would continue to exceed the MDAQMD-recommended thresholds of significance and maximum daily emissions of $NO_x$ that would be generated within the SCAQMD would continue to exceed the SCAQMD-recommended threshold. Therefore, this impact would be significant and unavoidable.

### Construction Localized Health Impacts from Regional Emissions

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (Friant Ranch Case) (SJVAPCD 2014), the air districts establish significance thresholds and recommend their use in CEQA air quality analysis of criteria pollutants. The significance thresholds were set at emission levels tied to the region's attainment status, based on emission levels at which stationary pollution sources permitted by the air district must offset their emissions. Such offset levels allow for growth while keeping the cumulative effects of new sources at a level that would not impede attainment of the NAAQS. The health risks associated with exposure to criteria pollutants are evaluated on a regional level, based on the region's attainment of the NAAQS; the mass emissions significance thresholds used in CEQA air quality analyses are not intended to be indicative of any localized human health impact that a project may have (SCAQMD 2014; SJVAPCD 2014). Therefore, the Project's exceedance of the mass regional emissions threshold (i.e., project construction $PM_{10}$ exceedance) from Project-related activities does not necessarily indicate that the Project would cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

As discussed earlier, the MDAB is currently classified as nonattainment for ozone and $PM_{10}$ CAAQS, and as attainment and/or unclassified for all of the other criteria pollutant standards. Although Project construction equipment would not emit ozone directly, it would emit the ozone precursors $NO_x$ and ROG. Because ozone formation occurs through a complex photochemical reaction between $NO_x$ and ROG in the presence of sunlight, and this may occur after dispersion of emissions away from a local source, ozone impacts are typically considered on a basin-wide or regional basis instead of a localized basis.

The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as pounds or tonnages of their precursor pollutants (i.e., $NO_x$ and ROG). It is not necessarily the mass of precursor pollutants that causes human health effects, but the concentration of resulting ozone. Because of the complexity of ozone formation and the nonlinear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is not practical to determine whether, or the extent to which, the Project's precursor emissions would result in the formation of secondary ground-level ozone nor the geographic and temporal distribution of such ozone. Meteorology, the presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and location of ozone (SCAQMD 2014; SJVAPCD 2014). The USEPA has provided guidance on how to assess the air quality impacts of ozone from individual sources (either new sources or modifications to existing sources) as part of Prevention of Significant Deterioration (PSD) compliance demonstrations under the New Source Review (NSR) program (USEPA 2016); however, the guidance is applicable to single sources that generate much more emissions (i.e., hundreds of tons per year) than would be generated during Project construction, and the Project would involve many dozen equipment and vehicle sources that would behave as an area source at the Project site, rather than a single source. Running a regional-scale photochemical grid model used for predicting ozone attainment with the emissions from any individual project can be done, but it would not yield reliable information regarding a measurable increase in ozone concentrations sufficient to accurately quantify ozone-related health effects from the Project. Similarly, it also would not be feasible to identify the Project's impact on the days of nonattainment per year. Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by ROG or $NO_x$ emissions from a local level (an individual project). Notwithstanding this scientific constraint, CEQA air quality analyses have been using project-level mass-emission thresholds for ozone precursors) and the disconnect between project-level emissions and project-level health impacts cannot be bridged at this time. Based on this information, a general description of the adverse health effects resulting from the Project-generated ozone precursor emissions is all that can be feasibly provided at this time.

As described above for ozone, the health-based ambient air quality standards for $PM_{10}$ are established as concentrations of $PM_{10}$ and not as pounds or tons of $PM_{10}$, and it is not necessarily the mass of $PM_{10}$ that causes human health effects, but the concentration of $PM_{10}$. However, unlike ozone emissions, which can be generated miles from the project site on a basin-wide or regional basis, emissions of $PM_{10}$, particularly fugitive dust $PM_{10}$, are generated at the site of project activities and tend to fall out of the atmosphere relatively close to the site of generation. Therefore, since there are no sensitive receptors located within 2 miles of the Project site and the closest residences at the Chuckawalla Valley State Prison approximately 2.9 miles to the west tend to be upwind, Project-emissions-related concentrations of $PM_{10}$ at the nearest sensitive receptor locations would not be expected to be at levels that would cause adverse health effects. For the localized health impacts that would be associated with Project-generated $PM_{10}$ exhaust emissions, specifically DPM, refer to Impact 3.2.5c.

### Operation

The MDAB is currently classified as nonattainment for ozone and $PM_{10}$ CAAQS, indicating an ongoing significant cumulative impact resulting from past and existing projects. As shown in Tables 3.2-4 and 3.2-5, Project operation would not result in criteria pollutant emissions that would exceed the MDAQMD significance thresholds. Therefore, operational emissions would not have a cumulatively considerable contribution to the significant cumulative impact associated with ozone and $PM_{10}$.

### Decommissioning

Decommissioning impacts are anticipated to be similar to those determined for Project construction as described above. The actual impacts would depend on the proposed decommissioning action and final use of the site.

### Operation Localized Health Impacts from Regional Emissions

Regulatory agencies have been evaluating impacts of criterial pollutants emissions from a regional level, and today's environmental models are designed to support such regional analysis. As discussed previously, converting project-level (local) criteria pollutant air quality impacts to a resulting human health impact is not practical with today's environmental science models. While Project operation would emit ozone precursor emissions of ROG and $NO_x$, because of the complexity of ozone formation and the nonlinear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to meaningfully convert specific Project emissions levels of $NO_x$ or ROG emitted in a particular area to a particular concentration of ozone and resulting human health impact in that area. The same is true for secondary PM, which, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides and $NO_x$. Therefore, a general description of the adverse health effects resulting from the Project-generated criteria pollutants is all that can be feasibly provided at this time.

### Mitigation Measures

Implement Mitigation Measures AQ-1 through AQ-4.

### Significance after Mitigation

This impact would remain significant after Mitigation Measures AQ-1 through AQ-4 are implemented.

**Impact 3.2.5c: Would the Project expose sensitive receptors to substantial pollutant concentrations? (*Less than significant with mitigation incorporated***

### Construction

During construction, the greatest potential for TAC emissions would be DPM emissions from heavy-duty equipment use. However, as explained in Section 3.2.4.1, the Project site is located in an open undeveloped space and is more than 2 miles from any sensitive receptors. Therefore, considering the substantial distance to the nearest sensitive receptors and the highly dispersive nature of DPM emissions, construction would not expose sensitive receptors to substantial pollutant concentrations. This impact would be less than significant.

If worker exposure to spores that cause Valley Fever were to result in illness, this would be considered a significant impact. Fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) would ensure that fugitive dust would be minimized. Controlled construction practices to prevent fugitive dust make the spreading of Valley Fever to surrounding communities that are more than 2.9 miles from the site unlikely, and when worker exposure to dust is unavoidable, employers must provide workers with NIOSH-approved respiratory protection with particulate filters. In addition, employers must also develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard. Therefore, Project impacts associated with Valley Fever would be less than significant with mitigation.

### Operation

As explained previously, worker trips during Project operation would generate approximately 100 vehicle trips per day. Operational activities would include solar module washing; vegetation, weed, and pest management;

and security. Maintenance activities would also include panel repairs; maintenance of transformers, inverters, and other electrical equipment as needed; and road and fence repairs. The nearest sensitive receptor is located over 2 miles from Project Site, and mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). In addition, Project operation would not involve heavy-duty off-road equipment. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. This impact would be less than significant.

#### Decommissioning

Decommissioning impacts are anticipated to be similar to those determined for Project construction as described above. The actual impacts would depend on the proposed decommissioning action and final use of the site.

#### Mitigation Measures

Implement Mitigation Measure AQ-1.

#### Significance after Mitigation

Less than significant.

**Impact 3.2.5d: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

Sources that may emit odors during construction activities include exhaust from diesel equipment and heavy-duty trucks, which could be considered offensive to some individuals. Odors from these sources would be localized and generally confined to the immediate area surrounding the Project site. The Project would be developed using typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. During operation, all construction-related odors would cease. PV solar projects are not typically large generators of odors; thus, Project operation would not add any new odor sources. Decommissioning activities are expected to be very similar to construction activities and may therefore also emit odors, including exhaust from diesel equipment and heavy-duty trucks. After decommissioning, all associated odors would cease. As a result, the Project would not create objectionable odors affecting a substantial number of people during any phase of the Project. The impact would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

### 3.2.5.2 Alternative B: Alternative Design

The Alternative B Design Elements would reduce overall ground-disturbing activities, but would require similar equipment types, quantities, and workforce sizes compared to Alternative A. While trenching activities would be reduced under Alternative B, up to 1,000 poles would installed to hold AC and DC collector lines aboveground. Overall, the maximum annual and maximum daily construction emissions for Alternative B would be similar to Alternative A, resulting in significant impacts in the MDAQMD as shown in Tables 3.2-7 and 3.2-8, respectively, and as shown in Table 3.2-2 for emissions generated within the SCAQMD. To minimize this impact, implementation of Mitigation Measures AQ-1 through AQ-4 would be required, but maximum daily emissions of $NO_x$ and $PM_{10}$ and maximum annual emissions of $PM_{10}$ would continue to exceed the significance thresholds. Therefore, the impact would be significant and unavoidable. In addition, emissions during the decommissioning phase of Alternative A are anticipated to be the same or less than the emissions estimated for construction activities. The impact statements and CEQA significance determinations identified for Alternative A also apply to Alternative B.

### 3.2.5.3 Alternative C: Reduced Acreage Alternative

The reduced acreage of Alternative C would reduce overall ground-disturbing activities, but would include the same schedule start date and require the same equipment types, quantities, and workforce sizes as the Project. Therefore, the maximum annual and maximum daily construction emissions would also be the same as for the Project, as shown in Tables 3.2-2 and 3.2-3, respectively. However, given the reduced amount of acreage associated with Alternative C, it is anticipated that Alternative C would take approximately three fewer months to construct compared to the Project. As described in Tables 3.2-9 and 3.2-10, the maximum annual construction emissions for Unit 1 would exceed the annual MDAQMD significance thresholds for $NO_x$ and $PM_{10}$, and the maximum daily construction-related emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$ would exceed the daily MDAQMD significance thresholds, as well as the SCAQMD threshold for $NO_x$, resulting in net increases of criteria pollutants that could result in or contribute to exceedances of the NAAQS and CAAQS. The maximum annual emissions for Unit 2 would exceed the maximum annual and daily MDAQMD thresholds for $PM_{10}$, resulting in net increases of criteria pollutants that could result in or contribute to exceedances of the NAAQS and CAAQS. Similar to the Project, implementation of Mitigation Measures AQ-1 through AQ-4 would reduce construction emissions; however, mitigated maximum daily emissions for the consolidated Alternative C of $NO_x$ and $PM_{10}$ and maximum annual emissions of $PM_{10}$ would continue to exceed the recommended thresholds of significance, resulting in a significant and unavoidable impact. Mitigated maximum daily Unit 1 $PM_{2.5}$ emissions would be reduced to below the MDAQMD significance threshold, but daily emissions of $NO_x$ and $PM_{10}$ would continue to exceed the MDAQMD thresholds. The mitigation measures would reduce the maximum annual Unit 2 $PM_{10}$ emissions generated within the jurisdiction of MDAQMD to below the MDAQMD's thresholds. The impact statements and CEQA significance determinations identified for the Project also apply to the consolidated Alternative C. The mitigated Unit 1 $NO_x$ and $PM_{10}$ emissions would result in impacts in the MDAQMD jurisdiction that would be significant and unavoidable as would the $NO_x$ impact in the SCAQMD jurisdiction. The mitigated Unit 2 $NO_x$ emissions would be reduced to a less-than-significant level. There would be no significant and unavoidable impacts associated with Unit 2.

### 3.2.5.4 Alternative D: No Plan Amendment/No Action/No Project

Alternative D would not result in any air quality impacts from Project construction, operation, maintenance, or decommissioning because it would result in no change from existing conditions and the existing environmental setting would be maintained. Because it would cause no impact to any of the CEQA criteria considered above, Alternative D would not cause or contribute to any cumulative effect on air quality.

## 3.2.6 Cumulative Effects

### 3.2.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

For air quality, the geographic scope of cumulative impacts is the area under the jurisdiction of the MDAQMD and SCAQMD, and the temporal scope is from the beginning of construction through demolition end of decommissioning of the Project. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants within the MDAQMD and SCAQMD is a result of past and present development within and beyond those air districts, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. Table 3.1-1 in Section 3.1.6.2 identifies each project in the cumulative scenario. Tables 3.2-11 and 3.2-12, below, present the mitigated Project construction emissions compared to available construction emissions estimated for other solar projects in the MDAB that may generate at the same time as the Project. These other solar projects are within 5 miles (Desert Quartzite Project) to 10 miles (Modified Blythe, McCoy Solar and Blythe Mesa Solar projects) of the proposed Crimson Solar Project site, and represent the primary construction-related sources of air pollutant emissions (i.e., those not already captured in baseline ambient air quality as a result of ongoing operational emissions in the region) and are therefore the most relevant projects to include in this analysis.

**TABLE 3.2-11**
**ESTIMATED ANNUAL CUMULATIVE SCENARIO CONSTRUCTION EMISSIONS WITHIN MDAB (TONS)**

| Project | ROG | $NO_x$ | CO | $PM_{10}$ | | | $PM_{2.5}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | Fugitive Dust | Total | Exhaust | Fugitive Dust | Total |
| Mitigated Project | 2.3 | 20.3 | 48.2 | 1.0 | 22.1 | 23.1 | 0.7 | 2.9 | 3.6 |
| **Cumulative Projects** | | | | | | | | | |
| Desert Quartzite Solar | 4.9 | 45.2 | 55.1 | 1.9 | 298.0 | 299.9 | 1.8 | 31.2 | 32.9 |
| Modified Blythe | 6.4 | 53.1 | 37.4 | 1.3 | 71.0 | 72.3 | 1.4 | 9.3 | 10.7 |
| McCoy Solar Energy | 1.9 | 9.9 | 20.3 | NR | NR | 12.5 | NR | NR | 3.0 |
| Blythe Mesa Solar | 4.1 | 18.4 | 34.6 | 1.1 | 5.0 | 6.2 | 1.1 | 1.0 | 2.0 |
| Federal *de minimis* levels | 100 | 100 | 100 | - | - | 100 | - | - | 100 |
| MDAQMD Thresholds | 25 | 25 | 100 | - | - | 15 | - | - | 12 |

NOTE: NR = Not Reported.
SOURCES: AECOM 2019a, BLM 2018, BLM 2012, BLM 2014, Riverside County and BLM, 2015.

**TABLE 3.2-12**
**ESTIMATED MAXIMUM DAILY CUMULATIVE SCENARIO CONSTRUCTION EMISSIONS WITHIN MDAB (LBS)**

| Project | ROG | NOx | CO | $PM_{10}$ | | | $PM_{2.5}$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Exhaust | Fugitive Dust | Total | Exhaust | Fugitive Dust | Total |
| Mitigated Project | 20.3 | 189.0 | 404.5 | 8.7 | 278.2 | 286.8 | 6.3 | 34.6 | 40.9 |
| **Cumulative Projects** | | | | | | | | | |
| Desert Quartzite Solar | 44.61 | 423.0 | 501.1 | 17.27 | 2,818.9 | 2,836.2 | 16.0 | 294.2 | 310.2 |
| Modified Blythe | 58.8 | 455.8 | 359.1 | 12.6 | 691.7 | 704.3 | 11.6 | 88.3 | 99.9 |
| McCoy Solar Energy | 23 | 135 | 218 | 7 | 129 | 136 | 6 | 28 | 34 |
| Blythe Mesa Solar | 54.5 | 133.2 | 270.8 | 8.7 | 41.8 | 50.5 | 8.1 | 8.8 | 16.9 |
| MDAQMD Thresholds | 137 | 137 | 548 | - | - | 82 | - | - | 65 |

SOURCE: AECOM 2019a, BLM 2018, BLM 2012, BLM 2014, Riverside County and BLM, 2015.

Project emissions generated within the SCAQMD associated with truck travel would also have the potential to result in cumulative impacts in the SCAQMD (see Tables 3.2-3 and 3.2-4). This cumulative analysis focuses on whether the Project would result in a cumulatively considerable increase in emissions. In developing mass emissions thresholds of significance for criteria air pollutants and ozone precursors, air districts consider the emission levels for which a project's individual emissions would be cumulatively considerable. Therefore, the MDAQMD's and SCAQMD's thresholds of significance are relevant to whether the Project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If the Project would exceed the identified construction or operational significance thresholds, its emissions would be cumulatively considerable, and if the Project emissions would not exceed the construction or operational significance thresholds, its emissions would not be cumulatively considerable.

As described under Section 3.2.2.2, Existing Air Quality, the Project site is located in the eastern Riverside County portion of the MDAB, which is currently designated as in attainment of NAAQS and CAAQS for all criteria pollutants except CAAQS for ozone and $PM_{10}$. In addition, Project indirect emissions would also be generated in parts of the Salton Sea Air Basin (SSAB) and the South Coast Air Basin (SCAB), which are under the jurisdiction of the SCAQMD and in nonattainment of the NAAQS and CAAQS for ozone, the CAAQS for $PM_{10}$, and the NAAQS for $PM_{2.5}$. The SCAB is in nonattainment of the CAAQS for $PM_{2.5}$, and the SSAB is in nonattainment of the NAAQS for $PM_{10}$. The SSAB and SCAB are designated in attainment or unclassified for the other criteria pollutants. Because the Project area is in nonattainment of these standards, all projects that emit ozone precursors and $PM_{10}$ have resulted and/or will contribute to a significant cumulative impact. This includes the Project's incremental contribution of ozone precursor and $PM_{10}$ emissions to regional concentrations.

As discussed under Impact 3.2.5b and as shown in Tables 3.2-2 and 3.2-11, with implementation of Mitigation Measures AQ-1 through AQ-4, Project annual construction emissions would be less than the annual Federal *de minimis* levels; however, as shown in Tables 3.2-2, 3.2-3, and 3.2-12, the Project maximum annual mitigated emissions of $PM_{10}$ and maximum daily mitigated emissions of $NO_x$ and $PM_{10}$ generated within the MDAQMD's jurisdiction would exceed the $PM_{10}$ annual significance threshold and the $NO_x$ and $PM_{10}$ maximum daily significance thresholds; and emissions in the SCAQMD's jurisdiction would exceed the $NO_x$ maximum daily significance threshold. Therefore, the Project's contribution to significant cumulative effects during construction would be considerable. Mitigation Measures AQ-1 through AQ-4 represent the maximum feasible reduction in Project construction emissions. Measures include implementation of a Dust Control Plan, adherence to Tier 4 Final California Emissions standards for all off-road equipment, construction equipment maintenance, and an idling policy which limits all diesel-powered off-road engines 2 minutes, which would be stricter than the 5-minute idling limitations required by CARB's Construction Equipment Idling regulation. In consideration of other projects in the surrounding area, the BLM would require implementation of Mitigation Measure AQ-5, which would require the Applicant or construction contractor to notify the MDAQMD of the expected timing of Project construction phases. Although Mitigation Measure AQ-5 would not reduce Project emissions, its implementation would ensure that the MDAQMD is kept informed of the Project-specific construction schedule relative to other projects in the MDAB.

The Project would not result in long-term operation or maintenance emissions that would exceed the MDAQMD significance thresholds for criteria pollutant emissions; therefore, the Project's operation and maintenance emissions would not result in nor have a cumulatively considerable contribution to significant cumulative impacts. Operational emissions would not be expected to be generated in the SCAQMD.

With regard to impacts on sensitive receptors, because the nearest sensitive receptors are approximately 2.9 miles west of the Project site, the total criteria pollutant and DPM emissions from construction would not combine with emissions from other cumulative projects to the extent that a significant cumulative impact would occur at the nearest sensitive receptors. However, as discussed in Section 3.2.2.5, cases of Valley Fever have steadily risen in recent years in Riverside County, indicating there is an existing significant cumulative impact with regard to Valley Fever in the Project area. However, the Project would implement fugitive dust control measures consistent with MDAQMD Rule 403 and Mitigation Measure AQ-1 (Dust Control Plan) to ensure that fugitive dust would be minimized. Controlled construction practices to prevent fugitive dust make the spreading of Valley Fever to surrounding communities that are more than 2.9 miles from the site unlikely, and when worker exposure to dust is unavoidable, employers must provide workers with NIOSH-approved respiratory protection with particulate filters. In addition, employers must also develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144). Therefore, the Project's contribution to cumulative impacts associated with Valley Fever would not be considerable.

### 3.2.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The cumulative impact statements and CEQA significance determinations identified for Alternative A are also applicable to Alternative B because, as described above and for purposes of potential air quality impacts, Alternative A and this alternative are substantially similar.

### 3.2.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

The cumulative impact statements and CEQA significance determinations identified for Alternative A are also applicable to the consolidated Alternative C, because, as described above and for purposes of potential air quality impacts, Alternative A and this alternative are substantially similar. With regard to the individual

Alternative C units, mitigated emissions of $NO_x$ and $PM_{10}$ for Unit 1 within MDAQMD would result in impacts that would be cumulatively considerable, and $NO_x$ emissions in the SCAQMD would result in impacts that would be cumulatively considerable. These cumulative impacts would be significant. There would be no cumulatively considerable impacts associated with Unit 2.

### 3.2.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project Alternative would not result in air pollutant emissions-related impacts. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, Alternative D would not result in a considerable incremental contribution to a significant cumulative impact.

## 3.2.7 Residual Effects

With the implementation of the prescribed mitigation measures, residual impacts on air resources would remain. Residual short-term construction impacts on air resources would result from construction of the Project or an action alternative because each would cause emissions of $NO_x$ and $PM_{10}$ that could contribute to exceedances of CAAQS, even with implementation of Mitigation Measures AQ-1 through AQ-4. Residual long-term operation and maintenance impacts on air resources would not be adverse. Operation and maintenance of the Project or Alternatives B or C would result in emissions that would not be expected to contribute to an exceedance of an NAAQS or CAAQS.

# 3.3 Biological Resources

## 3.3.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning biological resources. The regulations applicable to this analysis are summarized in Appendix E.

## 3.3.2 Regional and Local Environmental Setting

The setting information presented here was compiled from available scientific literature and the results of general biological reconnaissance and focused species surveys, as reported in the RE Crimson Solar Project Biological Resources Technical Report (BRTR) (AECOM 2019). The BRTR is included in Appendix I.1.

The Project site is located in the Colorado Desert near the northwestern base of the Mule Mountains. Desert scrub vegetation covers most of the site, except for sparsely vegetated desert dunes, including dune habitats composed of wind-blown sand, and more heavily vegetated desert washes. The topography of the Project site ranges from relatively flat terrain in the central and northern sections of the site to gentle slopes. The elevation ranges from 430 to 710 feet above mean sea level (AMSL).

The Project site is located on public lands managed by the Bureau of Land Management (BLM) under the CDCA Plan, as amended. The Project is within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP and sits at the northern foot of the Mule Mountain Area of Critical Environmental Concern (ACEC) and approximately 2 miles east of the Chuckwalla ACEC, as shown in Figure 3.3-1.

### 3.3.2.1 Vegetation Communities

Vegetation communities on the Project site were classified according to A Manual of California Vegetation, Second Edition (Sawyer et al. 2009) with updates based on the Manual of California Vegetation, Online Edition (California Native Plant Society [CNPS] 2019). Vegetation mapping was completed in 2011, 2012, and 2016. Vegetation communities were characterized as riparian or upland, and non-vegetated areas were classified as "other cover types." A map of vegetation communities is provided in Figure 3.3-2 and communities are summarized in Table 3.3-1 below. Full descriptions of vegetation communities are included in Appendix I.10.

#### *Riparian Vegetation Communities and Ephemeral Washes*

Two riparian vegetation communities are present on the Project site: creosote bush-white bursage/big galleta grass association and blue palo verde-ironwood woodland (which is a type of microphyll woodland[1]). These are associated with the braided ephemeral streams and washes on the Project site. A total of 91.8 acres of ephemeral washes occur on the Project site, including approximately 90.6 acres of unvegetated ephemeral streams and washes that occur within the mapped vegetation communities on-site and an additional 1.2 acres of ephemeral wash habitat that is concurrent with the blue palo verde-ironwood woodland vegetation community (Figure 3.3-3).[2] The 90.6 acres of small ephemeral streams and washes were not considered a separate vegetation community or cover type, and this acreage is overlapping, not in addition to, the acreages described in Table 3.3-1.

1 Microphyll woodland is a desert plant community comprising small-leaved trees such as ironwood and palo verde.

2 Vegetation community and unvegetated channel acreages are overlapping because these resources are based on a different mapping methodologies and minimum mapping units.

**TABLE 3.3-1**
**VEGETATION COMMUNITIES ON THE PROJECT SITE**

| Vegetation Communities | Total Acres |
|---|---|
| **Riparian** | |
| Creosote Bush – White Bursage/Big Galleta Grass Association[1] (*Larrea tridentata – Ambrosia dumosa* / *Pleuraphis rigida* Shrubland Alliance) | 289.4 |
| Blue Palo Verde – Ironwood Woodland[1] (*Parkinsonia florida – Olneya tesota* Woodland Alliance) | 1.2 |
| **Upland** | |
| Creosote Bush – White Bursage Scrub (*Larrea tridentata – Ambrosia dumosa* Shrubland Alliance) | 1,943.0 |
| Creosote Bush Scrub (*Larrea tridentata* Shrubland Alliance) | 51.8 |
| White Bursage Scrub (*Ambrosia dumosa* Shrubland Alliance) | 121.6 |
| Brittlebush Scrub (*Encelia farinosa* Shrubland Alliance) | 0.7 |
| Creosote Bush – White Bursage – Ocotillo Association (*Larrea tridentata – Ambrosia dumosa – Fouquieria splendens* Shrubland Alliance) | 67.5 |
| Desert Dunes[1] (*Dicoria canescens – Abronia villosa* Sparsely Vegetated Alliance) | 29.2 |
| Other Cover Type | |
| Developed | 0.25 |
| **Total** | **2,504.65** |

NOTE:
1 Sensitive natural community or riparian community.

### *Sensitive Vegetation Communities*

Sensitive vegetation communities on the Project site are summarized in Table 3.3-2; they include sensitive upland natural communities and riparian communities. The California Department of Fish and Wildlife (CDFW) Natural Communities List (CDFW 2018) indicates which natural communities are considered sensitive. Communities with state rarity ranks of 1 through 3 are considered sensitive natural communities. Riparian communities within the Project site, including blue palo verde-ironwood woodland, are also considered sensitive for purposes of the California Environmental Quality Act (CEQA), regardless of rarity ranking.

To evaluate the processes, history, and characteristics of windblown sand that comprises dune habitats within and adjacent to the Project site, Kenney GeoScience conducted a sand transport study: Geomorphic and stratigraphic evaluation of the stable early to mid-Holocene eolian (windblown) dune systems for the proposed Crimson Solar Project, eastern Chuckwalla Valley, Riverside County, California (Kenney GeoScience 2018). The study is included as Appendix I.3.

The sand transport study divides the Project site and surrounding areas into four Sand Migration Zones (SMZs), with further subdivision into zones indicating the relative sand transport rates. Three of the SMZs (Wiley's Well Basin, Mule, Western Mule, and Northern Mule) lie partially within the Project site, while the Central Mule SMZ is entirely outside of the Project site (Appendix I.3, Plate 3A). SMZs represent areas where a dune system receives a significant source of sand from a local source that is independent from upwind sources associated with the greater regional valley sand migration corridor. SMZs within the Project site are dominated by older, stabilized dune deposits with only thin active dune sands. The study proposed that windblown sand deposits on and adjacent to the Project site are primarily locally sourced from alluvial fans draining the Mule Mountains, as opposed to regional sand transport corridors, and local sand transport may cycle through erosion and movement by active washes and deposition by wind.

**TABLE 3.3-2**
**SENSITIVE VEGETATION COMMUNITIES ON THE PROJECT SITE**

| Vegetation Communities | State Rank[1] | Project Site (Non-Linear Project Features) (acres) | Project Site (Linear Project Features)[2] (acres) | Project Site Total (acres) |
|---|---|---|---|---|
| Creosote Bush – White Bursage/Big Galleta Grass Association (Larrea tridentata – *Ambrosia dumosa* / *Pleuraphis rigida* Shrubland Alliance) | S3 | 289.4 | - | 289.4 |
| Blue Palo Verde – Ironwood Woodland (*Parkinsonia florida* – *Olneya tesota* Woodland Alliance) | S4 | - | 1.2 | 1.2 |
| Desert Dunes (*Dicoria canescens* – *Abronia villosa* Sparsely Vegetated Alliance) | S3 | - | 29.2 | 29.2 |
| | **Total** | **289.4** | **30.4** | **319.8** |

NOTES:
1 State Rank:
S1 Critically Imperiled — Critically imperiled in the state because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 Imperiled — Imperiled in the state because of rarity due to very restricted range, very few occurrences (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
S3 Vulnerable — Vulnerable in the state due to a restricted range, relatively few occurrences (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
2 This is the total acreage of the corridor for linear features including access roads (outside of the solar arrays) and the gen-tie line. Actual impacts would be substantially less; however, a corridor has been identified to allow micrositing and avoidance of mature trees.
SOURCE: AECOM 2019, CDFW 2018.

### *Invasive Plant Species*

The most common invasive, non-native plants observed on the Project site were Sahara mustard (*Brassica tournefortii*), Mediterranean grasses (*Schismus barbatus arabicus*), and Russian thistles (*Salsola* spp.). The Sahara mustard and Russian thistles were especially common in the desert dunes community in the northern part of the Project site. Common Mediterranean grass and Arabian schismus were somewhat widespread throughout desert scrub habitats on-site. Prickly lettuce (*Lactuca serriola*), common ragweed (*Ambrosia artemisiifolia*), common sowthistle (*Sonchus oleraceus*), and puncture vine (*Tribulus terrestris*) were much less common.

## 3.3.2.2 State and Federal Wetlands

No state[3] or federal wetlands are present on the Project site or within the Project impact area. The Project site is situated at the eastern edge of the Chuckwalla Hydrologic Area and supports a broad alluvial fan that includes many braided washes and channels that converge into an off-site primary channel flowing into an intra-state playa lake northwest of the Project site. This playa lake is not a Traditional Navigable Water;[4] therefore, the channels in the Project site do not qualify as federally jurisdictional waters. The U.S. Army Corps of Engineers issued an Approved Jurisdictional Determination confirming the aquatic resources at the Project site do not qualify as federally jurisdictional waters. A full copy of the determination is provided in Appendix U.4.

As discussed under vegetation communities, there are 91.8 acres of ephemeral washes on the Project site, including 1.2 acres of riparian woodland (blue palo verde – ironwood woodland) and 90.6 acres of unvegetated streambed. (Figure 3.3-3). These resources do not meet the definition of a state wetland but are regulated by CDFW under California Fish and Game Code Section 1600 et seq. and by the State Water Resources Control Board under the Porter-Cologne Act.

3 Per the State Water Resources Control Board (2019) definition.

4 Traditional Navigable Waters include all of the "navigable waters of the United States," defined in 33 CFR Part 329 and by numerous decisions of the federal courts, plus all other waters that are navigable-in-fact.

### 3.3.2.3 Special-Status Plants

#### *Definition of Special-Status Plants*

Special-status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) or candidates for possible future listing as threatened or endangered under FESA (50 CFR, Section 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA), (Fish and Game Code [FGC], Section 2050 et seq.).
- Listed as rare under the California Native Plant Protection Act (CNPPA), (FGC, Section 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (FGC, Section 1901).[5]
- Considered to be "sensitive species" by the BLM. Sensitive plants are those species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the FESA. In addition to the list maintained regularly by BLM in California, California BLM policy on sensitive plants automatically affords sensitive status to plants with a California Rare Plant Rank of 1B identified in the Special Vascular Plants, Bryophytes, and Lichens List.
- Meets the definition of rare or endangered under CEQA Guidelines section 15380, subdivisions (b) and (d), including:
  - Plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants tracked by the California Natural Diversity Database (CNDDB) or designated as California Native Plant Society California Rare Plant Rank (CRPR) 1 or 2.
  - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This may include plants tracked by the CNDDB and CNPS as CRPR 3 or 4.
- Locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, Section 15125, subd. (c), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).

#### Summary of Plant Surveys Conducted

Rare plant surveys (see Appendix I.10 for details) were conducted as described below for the Project site. Surveys were conducted in the fall of 2011 and spring and fall of 2012 for the Sonoran West Solar Project, a previously planned solar development Project that encompassed the majority of the Project site, with the exception of 224.6 acres surrounding the Colorado River Substation.

In 2016, a spring survey was conducted for the entire Project site plus a 250-foot buffer (with the exception of a 1.78-acre realigned portion of the gen-tie line that was covered in 2010/2011 surveys) including all adjacent washes and microphyll woodlands. Because of low rainfall[6] in 2016, surveys in 2017 were conducted around previously mapped populations of Harwood's eriastrum (a special-status plant detailed below). The revised generation interconnect (gen-tie) corridor required additional rare plant surveys for approximately 26.12 acres, which were conducted in the spring of 2019.

#### Special-Status Plant Species within the Project Site and Vicinity

The following special-status plant species were detected within the Project site during special-status plant surveys conducted in 2011, 2012, 2016, 2017, and 2019 (Figure 3.3-4):

- Ribbed cryptantha (*Johnstonella costata*)

[5] Note that species protected under the CNPPA are different from those species and genera regulated under the California Desert Native Plants Act (California Food and Agricultural Code Sections 80071–80075), which are not discussed in this section.

[6] In years of low rainfall, some herbaceous desert plants may remain dormant as seeds or roots and be undetectable during surveys.

- Harwood's eriastrum (*Eriastrum harwoodii*)
- Utah vine milkweed (*Funastrum utahense*)
- Desert unicorn plant (*Proboscidea althaeifolia*)

Additional special-status plant species detected outside of the Project site but within the Sonoran West survey area included the following:

- Harwood's milkvetch (*Astragalus insularis* var. *harwoodii*)
- Abram's spurge (*Euphorbia abramsiana*)

No plant species listed under FESA or CESA have been detected or are expected to occur within or adjacent to the Project site. Special-status plant species reviewed for potential to occur, based on a 15-mile CNDDB search radius around the center of the Project site, are listed in Table 3.3-3. For purposes of this analysis, special-status plant species detected on or adjacent to the Project site incidentally or during special-status plant surveys are presumed present, and species that were not detected on the Project site or in adjacent areas, incidentally or during special-status plant surveys, are presumed absent.

**TABLE 3.3-3**
**SPECIAL-STATUS PLANT OCCURRENCE ON THE PROJECT SITE**

| ***Scientific Name***<br>**Common Name** | **Status** | **Occurrence on the Project Site[1]** |
|---|---|---|
| *Abronia villosa* var. *aurita*<br>Chaparral sand-verbena | CRPR: 1B.1<br>BLM: S | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Acleisanthes longiflora*<br>Angel trumpets | CRPR: 2B.3<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Androstephium breviflorum*<br>Small–flowered androstephium | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Astragalus insularis* var. *harwoodii*<br>Harwood's milkvetch | CRPR: 2B.2<br>NECO: SS | **PRESUMED PRESENT**. Not detected on the Project site during surveys. Documented occurrences nearby in the Sonoran West survey area. |
| *Astragalus lentiginosus* var. *borreganus*<br>Borrego milkvetch | CRPR: 4.3<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Astragalus sabulonum*<br>gravel milk-vetch | CRPR: 2B.3 | **PRESUMED ABSENT.** Not detected during surveys. Local occurrence based records from 1932 and 1938 along I-10. |
| *Bursera macrophylla*<br>Little-leaf elephant tree | CRPR: 2B.3 | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Calliandra eriophylla*<br>Pink fairy duster | CRPR: 2B.3 | **PRESUMED ABSENT.** Not detected during surveys. Local occurrence based on a single 1964 record along I-10. |
| *Carnegiea gigantean*<br>Saguaro | CRPR 2B.2 | **PRESUMED ABSENT.** Not detected during surveys, despite being a highly visible species. Local occurrences are from the Palo Verde Mountains. |
| *Castela emoryi*<br>Crucifixion thorn | CRPR: 2B.2 | **PRESUMED ABSENT**. Not detected during surveys. Nearest record is from 1989 and about 2.5 miles west of Wiley's Well Road (CDFW 2019). |
| *Chylismia arenaria*<br>Sand evening-primrose | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Colubrina californica*<br>Las Animas colubrine | CRPR: 2B.3<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. Suitable habitat present. Known to occur on the north side of I-10 on the east side of the McCoy Mountains (CDFW 2019). |
| *Condalia globosa* var. *pubescens*<br>Spiny abrojo | CRPR: 4.2<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. Suitable habitat present. Known to occur within 10 miles of the Project site. |
| *Coryphantha alversonii*<br>Foxtail cactus | CRPR: 4.3<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Cylindropuntia munzii*<br>Munz's cholla | CRPR: 1B.3<br>BLM: S<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. Historical documented occurrences nearby. |
| *Ditaxis serrata* var. *californica*<br>California ditaxis | CRPR: 3.2<br>NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |

**TABLE 3.3-3 (CONTINUED)**
**SPECIAL-STATUS PLANT OCCURRENCE ON THE PROJECT SITE**

| *Scientific Name* Common Name | Status | Occurrence on the Project Site[1] |
|---|---|---|
| *Eriastrum harwoodii* Harwood's eriastrum | CRPR: 1B.2 BLM: S | **PRESENT.** Three individuals were observed on the Project site during the spring 2012 survey, one individual was observed during the spring 2016 survey, and approximately 420 individuals were observed during the spring 2017 surveys; four individuals were observed within the gen-tie area during the spring 2019 survey. |
| *Euphorbia abramsiana* Abrams' spurge | CRPR: 2B.2 | **PRESUMED PRESENT.** Not detected on the Project site during surveys. Documented occurrences nearby in the Sonoran West survey area. |
| *Funastrum utahense* Utah vine milkweed | CRPR: 4.2 NECO: SS | **PRESENT.** 105 individuals were documented on the Project site during 2011/2012 surveys. Not detected on the Project site during 2016, 2017, and 2019 surveys. |
| *Hymenoxys odorata* Bitter rubberweed | CRPR: 2B.1 | **PRESUMED ABSENT.** Not detected during surveys. Nearest records are to the east around Blythe and around the town of Palo Verde in the 1940s (CDFW 2019). |
| *Johnstonella costata* ribbed cryptantha | CRPR: 4.3 | **PRESENT.** 2,153 individuals were observed on the Project site in 2011/2012. Not observed on the Project site in 2016/2017; more than 31,000 individuals were observed within the gen-tie area in spring 2019. |
| *Johnstonella holoptera* winged cryptantha | CRPR: 4.3 NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Lycium parishii* Parish's desert-thorn | CRPR: 2B.3 | **PRESUMED ABSENT.** Not detected during surveys. Record from 1985 is about 5 miles south of the Project site along Wiley's Well Road (CDFW 2019). |
| *Mentzelia puberula* Darlington's blazing star | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. Known to occur within 10 miles of the Project site. |
| *Mentzelia tricuspis* Spiny-hair blazing star | CRPR: 2B.1 | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Opuntia wigginsii* Wiggins' cholla | CRPR 3.3 | **PRESUMED ABSENT.** Not detected during surveys. Local occurrence based on a single 1937 record south of Palo Verde. |
| *Panicum hirticaule* ssp. *hirticaule* Roughstalk witch grass | CRPR: 2B.1 | **PRESUMED ABSENT.** Not detected during surveys. Has potential to occur along the large wash east of the Project site. |
| *Parkinsonia microphylla* Yellow paloverde | CRPR:4.3 | **PRESUMED ABSENT.** Not detected during surveys. |
| *Penstemon pseudospectabilis* ssp. *Pseudospectabilis* Desert beardtongue | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. Found within the Palo Verde Mountains in 1985 (CDFW 2019). |
| *Proboscidea althaeifolia* Desert unicorn plant | CRPR: 4.3 NECO: SS | **PRESENT.** Eleven individuals were observed on the Project Site during surveys conducted in 2011/2012. Not observed on the Project Site in 2016, 2017, and 2019 surveys. |
| *Teucrium cubense* ssp. *Depressum* Dwarf germander | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. The species has historically been detected around the Wiley's Well exit and I-10 (CDFW 2019). |
| *Wislizenia refracta* ssp. *palmeri* Palmer's jackass clover | CRPR: 2B.2 NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |
| *Wislizenia refracta* ssp. *Refracta* Jackass clover | CRPR: 2B.2 | **PRESUMED ABSENT.** Not detected during surveys. No documented nearby occurrences (within 10 miles). |

**Status Designations**:
BLM= Bureau of Land Management
S = Sensitive
NECO = Northern and Eastern Colorado Desert Coordinated Management Plan
SS = Special-status species

[1] Potential to occur species list based on CNDDB database search of a 10-mile buffer around the Project and presence of suitable habitat

**California Rare Plant Rank (CRPR):**
1A = Plants presumed extinct in California
1B = Plants rare and endangered in California and throughout their range
2 = Plants rare, threatened, or endangered in California but more common elsewhere in their range
3 = Plants about which more information is needed; a review list
4 = Plants of limited distribution; a watch list
0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

Thirteen additional species regulated by the California Desert Native Plant Act (CDNPA), but not considered special-status for the purposes of this document, were also observed within the Project site during 2016/2017 surveys: buckhorn cholla (*Cylindropuntia acanthocarpa* var. *coloradensis*), silver or golden cholla (*Cylindropuntia echinocarpa*), diamond cholla/pencil cactus (*Cylindropuntia ramosissima*), California barrel cactus (*Ferocactus viridescens*), common fishhook cactus (*Mammillaria tetrancistra*), desert-holly (*Atriplex hymenelytra*), ironwood

(Olneya tesota), blue palo verde (*Parkinsonia florida*), honey mesquite (*Prosopis glandulosa* var. *torreyana*), smoke tree (*Psorothamnus spinosus*), catclaw (*Senegalia greggii)*, and ocotillo (*Fouquieria splendens* subsp. *splendens*). Cottontop cactus (*Echinocactus polycephalus* var. *polycephalus*) was detected outside of the Project site but within the Sonoran West survey area.

### 3.3.2.4 Special-Status Wildlife

This section discusses special-status wildlife species that have potential to occur within and surrounding the Project site. Special-status wildlife, for the purposes of this document, include all wildlife species that meet one or more of the following criteria:

- Species listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under FESA or CESA
- Species that meet the definitions of rare or endangered under CEQA Guidelines Section 15380
- Species designated by CDFW as "species of special concern"[7]
- BLM special status and sensitive species[8]
- Species covered under an adopted Natural Community Conservation Plan or Habitat Conservation Plan
- Species that are "fully protected" in California (Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5515 (fish), and 5050 (reptiles and amphibians))

#### *Summary of Wildlife Surveys Conducted*

This section is based on the results of the surveys summarized in Table 3.3-4 and a review of publicly available occurrence data, as summarized in the BRTR (Appendix I.1). Surveys include those conducted for the Sonoran West Solar Project, a previously planned solar development project that encompassed the majority of the Project site (Figure 3.3-1).

#### *Special-Status Wildlife within the Project Site and Vicinity*

Special-status wildlife reviewed for occurrence within the Project site are summarized in Table 3.3-5.

Biological surveys detected a total of 163 wildlife species in the Project area (including buffers around the Project site), including 12 invertebrate species, 17 reptile species, 108 bird species, and 26 mammal species. A complete list of all wildlife species detected during the 2011/2012 and 2016/2017 surveys is provided in the BRTR. In addition to the special-status species discussed in detail in this section, common wildlife species detected included desert horned lizard (*Phrynosoma platyrhinos*), desert spiny lizard (*Sceloporus magister*), long-tailed brush lizard (*Urosaurus graciosus*), sideblotched lizard (*Uta stansburiana*), zebra-tailed lizard (*Callisaurus draconoides*), Great Basin whiptail (*Aspidoscelis tigris tigris*), desert iguana (*Dipsosaurus dorsalis*), long-nosed leopard lizard (*Gambelia wislizenii*), western banded gecko (*Coleonyx variegatus*), desert threadsnake (*Rena humilis cahuilae*), western shovel-nosed snake (*Chionactis occipitalis*), western diamond-backed rattlesnake (*Crotalus atrox*), sidewinder (*Crotalus cerastes*), Mojave rattlesnake (*Crotalus scutulatus*), coachwhip (*Coluber flagellum*), verdin (*Auriparus flaviceps*), barn swallow (*Hirundo rustica*), mourning dove (*Zenaida macroura*), ash-throated flycatcher (*Myiarchus cinerascens*), red-tailed hawk (*Buteo jamaicenis*), desert cottontail (*Sylvilagus auduboni*), black-tailed jackrabbit (*Lepus californicus*), spotted skunk (*Spilogale gracilis*), coyote (*Canis latrans*), and wild burro (*Equus asinus*). These species are not addressed in detail in this analysis; however, it is noted that they share habitat with the special-status species discussed in detail below.

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7 California Department of Fish and Wildlife (CDFW) Natural Diversity Database. Special Animals List. Periodic publication. 51. Pp.

8 Bureau of Land Management California Special Status Animal Species and Sensitive Species List. https://www.blm.gov/sites/blm.gov/files/documents/files/Programs_FishandWildlife_BLMCA%20Special%20Status%20Species.pdf.

**TABLE 3.3-4**
**SUMMARY OF WILDLIFE SURVEYS CONDUCTED**

| Survey | Year: Survey Area |
|---|---|
| Desert tortoise presence/absence surveys | 2012: Sonoran West site plus 500-foot buffer<br>2016: Project site, microphyll woodlands between Project site solar array fields, and 500-foot buffer along Project site southeast border adjacent to the Mule Mountains |
| Mojave fringe-toed lizard surveys | 2012: Sonoran West site plus 500-foot buffer and access roads plus a 250-foot buffer |
| Couch's spadefoot surveys | 2012: All potential habitat in Sonoran West site |
| Western burrowing owl breeding season surveys | 2012: Sonoran West site plus 500-foot buffer<br>2017: Project site only using modified protocol |
| Elf owl surveys | 2012: Sonoran West site plus 0.25-mile buffer (microphyll woodlands)<br>2017: Microphyll woodlands between the Project site solar array fields |
| Gila woodpecker surveys | 2012: Sonoran West site plus 0.25-mile buffer |
| Golden eagle helicopter surveys | 2012: Sonoran West site plus 10-mile buffer<br>2018: Project site plus 10-mile buffer |
| Bird observation points | 2012: Sonoran West site<br>2016/2017: Project Site plus microphyll woodlands between solar array fields |
| Water bird surveys | 2017: Chuckwalla Valley State Prison Pond (as a reference site) |
| Migratory bird transects | 2012: Sonoran West site<br>2016/2017: Project Site plus microphyll woodlands between the Project site solar array fields |
| Nocturnal avian radar monitoring | 2012: Sonoran West site |
| Desert kit fox and American badger | 2012: Sonoran West site plus 500-foot buffer (conducted as part of desert tortoise surveys)<br>2016/2017: Project site (conducted as part of desert tortoise and burrowing owl surveys) |
| Wildlife camera survey | 2017: Microphyll woodlands between the Project site solar array fields |
| Bat acoustic survey | 2012: Sonoran West site (microphyll woodlands)<br>2016/2017: Microphyll woodlands between the Project site solar array fields |

**TABLE 3.3-5**
**SPECIAL-STATUS WILDLIFE OCCURRENCE ON THE PROJECT SITE**

| ***Scientific Name***<br>**Common Name** | **Status[1]** | **Occurrence on the Project Site[2]** |
|---|---|---|
| **REPTILES and AMPHIBIANS** | | |
| *Gopherus agassizii*<br>desert tortoise | FESA: T<br>CESA: T/C[3]<br>NECO: SS<br>DRECP: FS | **PRESENT (resident).** Detected during surveys. Twenty individuals found within the desert tortoise survey area during protocol surveys in fall 2016, including two individuals within the Project site. Additional incidental observations of individuals were recorded within Project site and surrounding area during other biological studies. |
| *Heloderma suspectum cinctum*<br>banded gila monster | CDFW: SSC<br>BLM: S | **PRESUMED ABSENT.** Not detected. The nearest CNDDB records of this species are over 25 miles from the Project site, and the nearest California Wildlife Habitat Relationships predicted habitat occurs 20 miles from the Project site (CDFW 2019). This species was last documented around Blythe in 1948 (Lovich and Beaman 2007, as cited in AECOM 2019). |
| *Scaphiopus couchii*<br>Couch's spadefoot | CDFW: SSC<br>BLM: S<br>NECO: SS | **PRESUMED PRESENT (resident).** The species was not documented directly on the Project site, but was documented nearby in 2012, based on an unverified incidental observance. Potential to occur where Project access roads cross washes and in upland areas adjacent to washes. |
| *Uma scoparia*<br>Mojave fringe-toed lizard | CDFW: SSC<br>BLM: S<br>NECO: SS<br>DRECP: FS | **PRESENT (resident).** Detected during surveys. There were 414 observations of Mojave fringe-toed lizards and 138 observations of Mojave fringe-toed lizard sign (tracks) recorded during 2012 focused surveys. The species was also detected incidentally within the Project site in 2012 and 2016/2017 and during surveys in 2018. Occupied dune and non-dune habitat present within the Project site. |

**TABLE 3.3-5 (CONTINUED)**
**SPECIAL-STATUS WILDLIFE OCCURRENCE ON THE PROJECT SITE**

| ***Scientific Name*** **Common Name** | **Status**[1] | **Occurrence on the Project Site**[2] |
|---|---|---|
| **BIRDS** | | |
| *Aquila chrysaetos* golden eagle | State: FP BLM: S NECO: SS DRECP: FS | **PRESUMED PRESENT (foraging resident/migrant).** Not observed on the Project site during surveys. Potential sign detected and nests documented within 10 miles of the Project (Bloom Biological Inc. 2018). Potential to occur as a foraging resident or migrant. No nesting potential on-site. |
| *Asio flammeus* short-eared owl | CDFW: SSC | **PRESENT (migrant).** One individual detected during avian surveys on the adjacent Sonoran West site in 2012. Local winter resident with no nesting potential. Preferred foraging habitat is absent, but may occasionally forage on-site. |
| *Asio otus* long-eared owl | CDFW: SSC | **PRESENT (migrant).** One individual detected in a microphyll woodland near the Project site in 2016. This microphyll woodland where the owl was detected sits between two proposed solar array blocks and would be avoided in the project design. The individual was likely a migrant winter resident with no nesting potential. Preferred foraging habitat is absent, but may occasionally forage on-site. |
| *Athene cunicularia* burrowing owl | CDFW: SSC BLM: S NECO: SS DRECP: FS | **PRESENT (resident, migrant).** Detected near the Project site in both 2012 and 2016. Expected to occur during migration and as a foraging winter resident, potentially foraging and using burrows on-site for shelter. Not observed to breed on-site; though such potential exists. No breeding owls detected during surveys. |
| *Buteo regalis* ferruginous hawk | NECO: SS | **PRESENT (winter resident, migrant).** Present as foraging winter resident and migrant. No nesting potential. |
| *Buteo swainsonii* Swainson's hawk | CESA: T (nesting) BLM: S DRECP: FS | **PRESENT (migrant).** Present as foraging migrant only. No nesting potential. |
| *Chaetura vauxi* Vaux's swift | CDFW: SSC | **PRESENT (migrant).** Habitat not present. Recorded during surveys as a flyover migrant species only. |
| *Charadrius montanus* mountain plover | CDFW: SSC BLM: S NECO: SS | **PRESUMED PRESENT (migrant).** Not detected, habitat not present. Potential to occur as flyover/migrant species. |
| *Circus hudsonius* northern harrier | CDFW: SSC | **PRESENT (migrant).** Present as a foraging migrant. Nesting unlikely. |
| *Coccyzus americanus occidentalis* western yellow-billed cuckoo | FESA: T CESA: E BLM: S DRECP: FS | **PRESUMED PRESENT (migrant).** Habitat not present, not detected during surveys. Potential to occur as a migrant or flyover species. |
| *Contopus cooperi* olive-sided flycatcher | CDFW: SSC | **PRESUMED PRESENT (migrant).** Detected nearby during surveys. Preferred habitat not present. Potential to occur as a migrant or flyover species. |
| *Dendroica petechia* yellow warbler | CDFW: SSC NECO: SS | **PRESENT (migrant).** Foraging habitat is present. Nesting habitat is absent. Detected foraging on-site during migration. |
| *Empidonax traillii* Willow flycatcher | CESA: E NECO: SS DRECP: FS | **PRESUMED PRESENT (migrant).** Species detected, but subspecies not confirmed. Habitat not present. Potential to occur as flyover migrant only. |
| *Empidonax traillii extimus* southwestern willow flycatcher | FESA: E CESA: E NECO: SS DRECP: FS | **PRESUMED PRESENT (migrant).** Species detected, but not confirmed as the Southwestern subspecies. Habitat not present. Potential to occur as flyover migrant only. |
| *Falco mexicanus* prairie falcon | NECO: SS | **PRESENT (foraging resident).** Detected hunting over the Project site. Nesting habitat not present. Known to nest in the surrounding nearby mountains. |
| *Falco peregrinus anatum* American peregrine falcon | FESA: DL CESA: DL CDFW: FP | **PRESENT (migrant).** Detected nearby during surveys. Preferred foraging habitat (near water) not present. Potential to occur as a migrant or winter flyover species. |
| *Icteria virens* Yellow-breasted chat | CDFW: SSC | **PRESUMED PRESENT (migrant).** Not detected. Habitat not present. Potential to occur as flyover migrant only. |
| *Lanius ludovicianus* loggerhead shrike | CDFW: SSC | **PRESENT (resident).** Detected during surveys, habitat present. Nesting confirmed off-site. Nesting habitat present. |
| *Melanerpes uropygialis* Gila woodpecker | CESA: E BLM: S NECO: SS DRECP: FS | **PRESUMED PRESENT (migrant).** Not detected during focused breeding season surveys. Site is lacking suitable habitat, and adjacent microphyll woodlands are marginally suitable. Potential to occur during dispersal. |

**TABLE 3.3-5 (CONTINUED)**
**SPECIAL-STATUS WILDLIFE OCCURRENCE ON THE PROJECT SITE**

| ***Scientific Name*** **Common Name** | **Status**[1] | **Occurrence on the Project Site**[2] |
|---|---|---|
| **BIRDS (cont.)** | | |
| *Micrathene whitneyi* elf owl | CESA: E NECO: SS BLM: S | **PRESUMED PRESENT (migrant).** Species not detected during focused breeding season surveys. Site is lacking suitable habitat, and adjacent microphyll woodlands are marginally suitable. |
| *Oreothlypis luciae* Lucy's warbler | CDFW: SSC BLM: S | **PRESENT (migrant).** Detected nearby during surveys. Preferred mesquite habitat not present. Potential to occur during migration or dispersal. |
| *Pelecanus erythrorhynchos* American white pelican | CDFW: SSC | **PRESUMED PRESENT (flyover migrant).** Not detected. No nesting or foraging habitat is present. Potential to occur as a flyover species. |
| *Progne subis* purple martin | CDFW: SSC | **PRESUMED PRESENT (migrant).** Habitat not present. Potential to occur as migrant only. |
| *Pyrocephalus rubinus* vermillion flycatcher | CDFW: SSC NECO: SS | **PRESUMED PRESENT (migrant).** Preferred habitat not present. Potential to occur as a migrant only. |
| *Rallus obsoletus yumanensis* Yuma Ridgway's rail | FESA: E CESA: T CDFW: FP DRECP: FS | **PRESUMED PRESENT (flyover migrant).** Not detected during surveys, foraging habitat not present. |
| *Riparia* bank swallow | CESA: T BLM: S | **PRESENT (migrant).** Detected as a flyover migrant only. Nesting and preferred foraging habitat not present. |
| *Toxostoma bendirei* Bendire's thrasher | CDFW: SSC BLM: S NECO: SS DRECP: FS | **PRESUMED PRESENT (migrant).** Habitat is marginal, and there are no known records nearby. Potential to occur during migration or dispersal. |
| *Toxostoma crissale* Crissal thrasher | CDFW: SSC NECO: SS | **PRESENT (migrant).** Preferred habitat is not present. Potential to occur as transient or flyover species only. |
| *Toxostoma lecontei* LeConte's thrasher | NECO: SS | **PRESENT (resident).** Detected during surveys, habitat present. Known to nest in nearby microphyll woodlands. |
| *Vireo bellii arizonae* Arizona Bell's vireo | CESA: E BLM: S | **PRESUMED PRESENT (migrant).** Not observed during surveys but likely to occur as a migrant species due to the site's proximity to the lower Colorado River where this subspecies is a summer breeding resident. |
| *Vireo bellii pusillus* Least Bell's Vireo | FESA: E CESA: E | **PRESUMED PRESENT (migrant).** Habitat not present; not detected during surveys. This subspecies was presumed present due its unknown migration path and potential occurrence as a migrant through the Colorado Desert (USFWS 2016). This species has not been recorded within 10 miles of the Project site within the last 25 years, and the Project site is outside of the currently described range of this subspecies. |
| *Xanthocephalus* yellow-headed blackbird | CDFW: SSC | **PRESENT (migrant).** Habitat not present. Potential to occur as a migrant only. |
| **MAMMALS** | | |
| *Antrozous pallidus* pallid bat | CDFW: SSC BLM: S NECO: SS DRECP: FS | **PRESENT (foraging).** Detected during acoustic surveys. Roosting habitat is absent. Potential for nearby roosting in the Mule Mountains. |
| *Chaetodipus fallax pallidus* pallid San Diego pocket mouse | CDFW: SSC | **PRESUMED ABSENT.** Project site is outside of predicted occupied habitat (Davis and Soong 2013). |
| *Corynorhinus townsendii* Townsend's big-eared bat | CDFW: SSC BLM: S NECO: SS DRECP: FS | **PRESUMED PRESENT (foraging).** Not detected during surveys, but foraging habitat is present. Roosting habitat is absent. Potential for nearby roosting in caves in the Mule Mountains. |
| *Eumops perotis californicus* western mastiff bat | CDFW: SSC BLM: S NECO: SS | **PRESENT (foraging).** Detected during surveys, foraging habitat is present. Roosting habitat is absent. Potential for nearby roosting in the Mule Mountains. |
| *Lasiurus blossevillii* western red bat | CDFW: SSC | **PRESENT (foraging).** Detected during acoustic surveys. Potential for occasional roosting in microphyll woodlands adjacent to the site. |
| *Lasiurus xanthinus* western yellow bat | CDFW: SSC | **PRESENT (foraging).** Detected during acoustic surveys. Potential for occasional roosting in microphyll woodlands adjacent to the site. |

**TABLE 3.3-5 (CONTINUED)**
**SPECIAL-STATUS WILDLIFE OCCURRENCE ON THE PROJECT SITE**

| ***Scientific Name*** **Common Name** | **Status**[1] | **Occurrence on the Project Site**[2] |
|---|---|---|
| **MAMMALS (cont.)** | | |
| *Macrotus californicus* California leaf-nosed bat | CDFW: SSC BLM: S NECO: SS DRECP: FS | **PRESENT (foraging).** Detected on-site during acoustic surveys. Roosting habitat is absent. Known roost site is located in the Mule Mountains. |
| *Myotis ciliolabrum* western small-footed myotis (bat) | BLM: S | **PRESUMED ABSENT.** Not detected during surveys. Roosting habitat absent. Site is outside of the species' expected range (Zeiner et al. 1988-1990). |
| *Myotis occultus* Arizona myotis (bat) | CDFW: SSC | **PRESENT (foraging).** Detected during surveys, foraging habitat is present. Maternity roosting habitat is absent, but occasional non-maternity roosting could occur. |
| *Myotis thysanodes* fringed myotis (bat) | BLM: S NECO: SS | **PRESUMED ABSENT.** Not detected during surveys. Roosting habitat absent. Site is outside of the species' expected range (Zeiner et al. 1988-1990). |
| *Myotis velifer* cave myotis (bat) | CDFW: SSC BLM: S NECO: SS | **PRESENT (foraging).** Detected on-site during acoustic surveys. Roosting habitat is absent. Known roost site is located in the Mule Mountains. |
| *Myotis yumanensis* Yuma myotis (bat) | BLM:S | **PRESENT (foraging).** Detected during surveys. May use the site for seasonal foraging or only occur as a migrant/flyover species. Roosting habitat is absent. |
| *Nyctinomops macrotis* big free-tailed bat | CDFW: SSC | **PRESENT (foraging).** Detected during surveys, foraging habitat is present. Roosting habitat is absent. |
| *Nyctinomops femorosaccus* pocketed free-tailed bat | CDFW: SSC NECO: SS | **PRESENT (foraging).** Detected during surveys, foraging habitat is present. Roosting habitat is absent. |
| *Odocoileus hemionus eremicus* burro deer | NECO: SS DRECP: PS | **PRESENT (resident).** Documented (scat, tracks, and a skull) within microphyll woodlands and adjacent habitat in 2016. Captured on wildlife cameras in microphyll woodlands. |
| *Ovis canadensis nelsoni* desert bighorn sheep | State: FP BLM: S NECO: SS DRECP: FS | **PRESUMED PRESENT (migrant).** Potential to use the site for seasonal and dispersal movement area or occasional foraging only due to the lack of permanent water within or adjacent to the Project site. No documented records, but may occasionally use the Mule Mountains and move through the microphyll woodlands near the Project site to access other mountain ranges. |
| *Puma concolor browni* Yuma mountain lion | CDFW: SSC NECO: SS | **PRESUMED PRESENT (foraging).** No documented records, but no species-specific surveys were conducted; expected as infrequent site visitor. Potential prey species (burro deer) are present. |
| *Taxidea taxus* American badger | CDFW: SSC | **PRESENT (resident).** Tracks and a skull were found within the Project site in 2016/2017. One individual was captured on wildlife cameras in microphyll woodlands. |
| *Vulpes macrotis arsipus* desert kit fox | DRECP: PS | **PRESENT (resident).** Documented occurrences (tracks, burrows, scat) throughout the Project site. |

NOTES:

1 **Status:**
FESA = Federal Endangered Species Act
CESA = California Endangered Species Act
E = Endangered
T = Threatened
C = Candidate for listing
DL = Delisted
BLM = Bureau of Land Management
S = Sensitive
NECO = Northern and Eastern Colorado Desert Coordinated Management Plan special-status species (SS)
DRECP = Desert Renewable Energy Conservation Plan
FS = Focus Species
PS = Planning Species
CDFW = California Department of Fish and Wildlife
SSC = California species of special concern
FP = fully protected species

2 Species occurrence descriptions:
*Present:*
- Detected during general or focused surveys on or adjacent to the Project site, including species detected within the Sonoran West site.

*Presumed Present:*
- Not detected during general or focused surveys conducted for the Project; and
- Low probability of detection, if present, based on the types of surveys conducted for the Project; and
- Occurrence record within 10 miles of the Project site within the last 25 years; and
- Suitable habitat is present, or, for avian species occurring as flyover migrants, the Project site may be used as a migratory or dispersal pathway.

*Presumed Absent:*
- Not detected during focused or general surveys conducted for the Project; and
- High probability of detection, if present, based on the types of surveys conducted for the Project; or
- Suitable habitat is absent; or
- No occurrence records within 10 miles of the Project site within the last 25 years.

2 Species occurrence descriptions:
*Resident*: Species has the potential to use the site for nesting or rearing young and foraging.
*Foraging*: Species has the potential to forage on-site, but is not expected to use the site for nesting or rearing young.
*Migrant*: Species may travel through the site and occasionally use the site for shelter or foraging during migration or dispersal.
Flyover Migrant: Species may fly over the site, but is unlikely to use the site for shelter or foraging.

3 Desert tortoise is listed as a threatened species pursuant to CESA (See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(4)(A)). In March 2020, the Fish and Game Commission received a petition to list desert tortoise as an endangered species, and on October 14, 2020 the Commission determined that listing as an endangered species may be warranted and voted to make desert tortoise a candidate for listing as an endangered species. Thus, at the time of the Final EIS and Proposed PA publication, desert tortoise is both a threatened species and a candidate species for listing as endangered. (See 2020 Cal. Reg. Notice Register, No. 44-Z, pp. 1445-1446 (October 30, 2020).)

### Federally Listed Wildlife Species

Five wildlife species listed under both FESA and CESA occur or have a potential to occur or migrate through the Project site: desert tortoise, Yuma Ridgway's rail, southwestern willow flycatcher, western yellow-billed cuckoo, and least Bell's vireo. Of these species, only desert tortoise has been detected during surveys and has suitable habitat within the Project site (Figure 3.3-5). Desert tortoise was detected within the Project site and surrounding area during both 2012 and 2016 focused surveys and incidentally during other surveys. There is no suitable breeding or foraging habitat for Yuma Ridgway's rail or western yellow-billed cuckoo within the Project site; however, the areas of microphyll woodlands on the Project site may provide foraging habitat for migrating southwestern willow flycatcher and least Bell's vireo. Desert tortoise, Yuma Ridgway's rail, southwestern willow flycatcher, and western yellow-billed cuckoo are further discussed in the BRTR (Appendix I.1), including their occurrence in the region, surveys that were conducted, and species presence or potential to occur within the Project site. Distribution and occurrence of all of these federally listed wildlife species is further discussed in the DRECP Biological Assessment (USFWS 2016), including least Bell's vireo.

There is no designated critical habitat within the Project site. The nearest critical habitat is for desert tortoise and is located immediately west of the Project site (Figure 3.3-1).

### State-Listed Wildlife Species

Five wildlife species listed only under CESA occur or have a potential to occur or migrate through the Project site: Swainson's hawk, elf owl, Gila woodpecker, willow flycatcher, and bank swallow. Of these, Swainson's hawk, bank swallow, and potentially a willow flycatcher were observed within the Project site. Swainson's hawk, elf owl, Gila woodpecker, and bank swallow are discussed in detail in the BRTR (Appendix I.1), including their occurrence in the region, surveys that were conducted, and presence or potential to occur within the Project site. The willow flycatcher regional occurrence is further discussed in the DRECP and NECO Plan.

The federal- and state-listed desert tortoise, discussed previously, also occurs on-site.

### Other Special-Status Wildlife Species

Additional special-status wildlife species that are present or presumed present within the Project site that are not listed under FESA or CESA are discussed in the BRTR (see Appendix I.1). These include the Mojave fringe-toed lizard, Couch's spadefoot, burrowing owl, golden eagle, desert kit fox, American badger, several special-status bat species, several migratory birds, and additional species listed in Table 3.3-5 above.

The Mojave fringe-toed lizard is known to occur and is well documented within the dune habitat and even some non-dune habitats in the Project site (Figure 3.3-6) (CDFW 2019).

Couch's spadefoot is presumed present based on a single, incidental occurrence recorded in 2012 (Figure 3.3-6) within an avoided wash between the solar array fields.

Burrowing owls are known to occur within the site, based on sign recorded at burrows (Figure 3.3-7), but have not been documented breeding on the site during nesting season surveys. While burrowing owls likely only occur as a winter resident or migrant species, this species also has the potential to occur in a breeding capacity.

Golden eagles have not been directly observed within the Project site; however, there are nest sites within 10 miles and a desert kit fox mortality observed within the Project site may be indicative of golden eagle foraging activity. Therefore, golden eagles are presumed to occur as an occasional foraging species. The Project site is not within any "Key Raptor Areas" or important occupied habitat areas identified in the DRECP.

The following special-status bat species are expected to forage within the Project site based on the results of acoustic surveys and habitats present within the Project site: pallid bat, Townsend's big-eared bat, western mastiff bat, western red bat, western yellow bat, California leaf-nosed bat, Arizona myotis, cave myotis, Yuma myotis, big free-tailed bat, and pocketed free-tailed bat. Bat maternity roost sites are not expected to occur on the Project site, although certain bat species are likely to use rocks, shrubs, trees, or other habitat within the Project site for roosting and foraging. Important mine roost sites for California leaf-nosed bat and cave myotis are known to occur in the Mule Mountains less than 3 miles from the Project site (Figure 3.3-8). The microphyll woodlands that are located between the solar array fields may provide valuable foraging habitat for California leaf-nosed bats (Figure 3.3-8).

The desert kit fox and American badger are known to occur on the Project site based on observations of burrows and sign (Figure 3.3-9). These species create and occupy burrows and forage on small mammals and other prey within the Project site.

Several migratory bird species are likely to either fly over the Project site and/or forage within the Project site during migration and dispersal. The Project site falls within the Pacific Flyway, one of the four major North American migration flyways, and is located approximately 5 miles west of the Lower Colorado River Valley and 45 miles northeast of the Salton Sea—both considered to be important bird areas (BLM 2014). Migratory bird transects and observation points were surveyed in 2012, 2016, and 2017 within the RE Crimson and larger Sonoran West project sites, and the Coachella Valley State Prison Ponds were surveyed in spring and summer of 2017. A total of 3,396 bird observations were recorded during both migratory seasonal periods consisting of 60 species during the migratory bird observation point survey efforts during fall 2016 and spring 2017. The highest numbers of individuals observed (occurring singly or in flocks) were for turkey vulture (*Cathartes aura*; 863 observations), horned lark (*Eremophila alpestris*; 783 observations), barn swallow (*Hirundo rustica*; 259 observations), common raven (*Corvus corax*; 194 observations), tree swallow (*Tachycineta bicolor*; 193 observations), and Swainson's hawk (*Buteo swainsoni*; 183 observations). Nocturnal avian radar sampling was conducted during the spring 2012 migration period with monitoring stations located adjacent to the Project within the previously planned Sonoran West Project site. The results of the study showed that the site had low passage rates compared to those reported elsewhere in the literature in California (Western Ecosystems Technology, Inc., and Natural Resource Consultants 2011; Hamer Environmental, L.P. 2010 as cited in AECOM 2019). This difference may be due to the lack of water, sparse cover, general lack of food and other resources that birds rely on during migration. It is expected that birds are more likely to follow the Colorado River during migration where there is increased vegetation for cover, food, water, and other resources.

### 3.3.2.5 Wildlife Movement and Nursery Sites

The Mule Mountains are part of the BLM Palen McCoy Mountains–Little Picacho linkage planning area for multiple species, such as American badger and bighorn sheep (Penrod et al. 2012 as cited in AECOM 2019). Burro deer are located in two main herds to the north and south of I-10, with an important linkage between the Mule and McCoy Mountains (BLM 2014). The Project site and the washes that run between the solar array fields are used by a variety of wildlife species for movement purposes as determined through wildlife camera surveys (Figure 3.3-8) and other biological surveys. These washes contain a variety and density of vegetative cover that is likely to support local movement of wildlife species between the valley floor and nearby surrounding mountains, including the McCoy Mountains to the north, the Mule Mountains to the south, and the Little Chuckwalla Mountains to the west.

The Project site is not known to include any wildlife nursery sites where wildlife is likely to congregate for the purpose of rearing young. As discussed in the BRTR (Appendix I.1), mine sites in the Mule Mountains (Figure 3.3-8) contain roost sites and maternity colonies for the California leaf-nosed bat and cave myotis.

## 3.3.3 Analytical Methodology

This section describes the methods taken to analyze direct and indirect effects that are likely to occur as a result of construction, operation, and decommissioning of the Project and Project alternatives. Direct and indirect effects are described in Section 3.3.4 and the significance of those effects under CEQA is discussed in Section 3.3.5. The analysis relies on the information summarized in the Regional and Local Environmental Setting (Section 3.3.2) and detailed in the BRTR and technical survey reports (Appendix I.1). Because a long period, relative to areas with higher rainfall, is required for natural revegetation to recover from disturbance in the desert (typically greater than 2 years), all ground-disturbing activity is considered a permanent impact for the purpose of the analysis.

To provide context and scale, impacted habitats are compared to reported habitat acreages within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP, in which the Project is situated. The Cadiz

Valley and Chocolate Mountains Ecoregion is one of the ten ecoregion subareas used in the DRECP to describe biological resources.

## 3.3.4 Direct and Indirect Effects

This section identifies direct and indirect effects to the biological resources within the Project site that would result from construction, operation, and decommissioning of the Project and describes the significance of those effects after mitigation. Table 3.3-6 summarizes the change in effects to biological resources under each alternative, compared to the Project.

**TABLE 3.3-6**
**CHANGE IN ADVERSE EFFECTS BY ALTERNATIVE RELATIVE TO EFFECTS UNDER THE PROJECT (ALTERNATIVE A)**

| Biological Resource | Project (Alternative A) Effects After Mitigation | Alternative B | Alternative C |
|---|---|---|---|
| Vegetation Communities | ***No substantial effects*** | *Reduction (DE-1, DE-2, DE-3)* | *Reduction* |
| Jurisdictional Waters | ***No substantial effects*** | *Reduction* | *Minor reduction* |
| Special-Status Plants | ***No substantial effects*** | *Minor reduction* | *Reduction* |
| Special-Status Wildlife (overall) | ***No substantial effects*** | *Variable* | *Reduction* |
| Desert Tortoise | ***No substantial effects*** | *Reduction* | *Reduction* |
| Mojave Fringe-Toed Lizard | ***No substantial effects*** | *Reduction (DE-1)* | *Reduction* |
| Couch's Spadefoot | ***No substantial effects*** | *Minor reduction* | *No change* |
| Western Burrowing Owl | ***No substantial effects*** | *Increase (DE-2, DE-3), Minor reduction (DE-1)* | *Reduction* |
| Golden Eagle | ***No substantial effects*** | *Increase* | *Minor reduction* |
| Swainson's Hawk and Bank Swallow | ***No substantial effects*** | *Increase (DE-2, DE-3); Minor reduction (DE-1)* | *Reduction* |
| Special-Status and Migratory Birds | ***No substantial effects*** | *Increase (DE-2) Minor reduction (DE-1)* | *Minor reduction* |
| Desert Kit Fox and American Badger | ***No substantial effects*** | *Minor reduction (DE-1)* | *Reduction* |
| Special-Status Bat Species | ***No substantial effects*** | *Minor increase (DE-2, DE-3), Minor reduction (DE-1)* | *Reduction* |
| Wildlife Movement | ***No substantial effects*** | *Reduction* | *Reduction* |

NOTES: DE = Design Element
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations
Pertains only to Alternative B.

### 3.3.4.1 Alternative A: Proposed Action

The following resource-specific analyses address both construction and operation. Decommissioning is addressed at the end of this subsection.

#### *Vegetation Communities*

Permanent direct effects on vegetation communities would include grading, crushing, and grubbing during construction, vegetation trimming, and maintenance during operations. Table 3.3-7 summarizes the vegetation communities subject to these direct impacts and compares them to the quantity of available acreage of each community estimated to occur within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP. These direct impacts would be low relative to the total existing acreage of each community in the surrounding ecoregion. Impacts on microphyll woodlands would be avoided or minimized by the implementation of Mitigation Measure BIO-19, which requires buffers around microphyll woodlands. The direct and permanent loss of up to 289.4 acres of Creosote Bush—White Bursage/Big Galleta Grass Association, a sensitive natural community, would be mitigated by Mitigation Measure BIO-18 through restoration or compensation.

**TABLE 3.3-7**
**VEGETATION COMMUNITY IMPACTS**

| Vegetation Communities | Sensitive Vegetation Community State Rank[1] | Project Impacts (acres) |
|---|---|---|
| **Riparian (290.6 acres)** | | |
| Creosote Bush—White Bursage/Big Galleta Grass Association (*Larrea tridentata* – *Ambrosia dumosa* / *Pleuraphis rigida* Shrubland Alliance) | S3 | 289.4 |
| Blue Palo Verde—Ironwood Woodland (*Parkinsonia florida* – *Olneya tesota* Woodland Alliance) | S4 | 1.2 |
| **Upland (2,198.4 acres)** | | |
| Creosote Bush – White Bursage Scrub (*Larrea tridentata* – *Ambrosia dumosa* Shrubland Alliance) | - | 1,943.0 |
| Creosote Bush Scrub (*Larrea tridentata* Shrubland Alliance) | - | 51.8 |
| White Bursage Scrub (*Ambrosia dumosa* Shrubland Alliance) | - | 121.6 |
| Brittlebush Scrub (*Encelia farinosa* Shrubland Alliance) | - | 0.7 |
| Creosote Bush – White Bursage – Ocotillo Association (*Larrea tridentata* – *Ambrosia dumosa* – *Fouquieria splendens* Shrubland Alliance) | - | 67.5 |
| Desert Dunes (*Dicoria canescens* – *Abronia villosa* Sparsely Vegetated Alliance) | S3 | 29.2 |

NOTES:
1 Sensitive natural community or riparian community

*State Rank:*
- S1 Critically Imperiled — Critically imperiled in the state because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
- S2 Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
- S3 Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

SOURCE: AECOM 2019, CDFW 2018.

Direct impacts to vegetation communities could also result from disturbance of areas outside of the Project site during construction through vehicle trespass or improper materials staging. Hazardous spills and trash on-site could move or spread and degrade off-site vegetation communities. Potential temporary and permanent indirect impacts include the potential for airborne dust, sedimentation, and erosion to degrade surrounding vegetation communities, particularly due to the destruction of desert pavement and biological soil crusts that currently suppress erosion where they exist within the Project site. While direct and indirect effects—such as dust, trash, and hazardous spills posed by accidental off-site disturbance would be moderate, these effects would be reduced by the implementation of Mitigation Measures AQ-1, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-10, and BIO-14. Under Mitigation Measures BIO-1, BIO-2, and BIO-3, the Project Biologist and biological monitors would implement measures to avoid and minimize impacts. A Worker Environmental Awareness Program (WEAP) would also be implemented as part of Mitigation Measure BIO-17 to ensure all workers and other staff associated with the Project are aware of applicable mitigation measures and sensitive biological resources, including sensitive vegetation communities.

As discussed in Section 3.19, Wildland Fire Ecology, the Project could increase the risk of wildfires. Most fires in the desert are infrequent and of low severity because production of annual and perennial herbs seldom provides a fuel load capable of sustaining fire (Marshall 1995). While wildfire risks are low due to the low density of vegetation on-site, these risks would be reduced with implementation of Mitigation Measure BIO-15.

The Project could also result in the potential introduction and spread of exotic species (also discussed in Section 3.19), including Sahara mustard, into the surrounding vegetation communities as a result of the removal of native vegetation, disturbance of soils, and transport of invasive species seeds on construction equipment. Increased vehicle traffic can also increase invasive species densities and be a vector for spreading new invasive species to the Project site. This would be considered a permanent, indirect impact. Once introduced, these exotic species often out-compete native species, resulting in a reduction in growth, future dispersal, recruitment of native species, and the eventual degradation of the native vegetation community. The potential for invasive weed species to proliferate on the Project site would be reduced by implementation of a Weed Management Plan as described under Mitigation Measure BIO-16. A copy of the Weed Management Plan is provided in Appendix I.10. The potential for invasive weeds to colonize short-term disturbance areas would be reduced by implementation of a Restoration Plan, as described under Mitigation Measure BIO-18.

With respect to impacts on sensitive vegetation communities, direct impacts to blue palo verde–ironwood woodland and desert dunes would be entirely associated with the construction of the linear components of the Project, including the gen-tie line, as shown in Table 3.3-2. Impacts to blue palo verde–ironwood woodland would be mitigated under Mitigation Measure BIO-19 through micrositing, implementation of setbacks, and off-site mitigation. No adverse effects to the blue palo verde–ironwood woodland community are expected to result from potential Project groundwater pumping because, as discussed in Section 3.18, considering the temporary demand for water during construction, the total quantity needed compared to the total annual recharge and amount of groundwater in storage, and the relative stability of groundwater levels in the basin, Project construction would have no adverse effects related to groundwater levels.

Indirect impacts to the dune community in SMZs within and adjacent to the Project site could occur through disruption of sand movement and transport processes. The sand transport study (Kenney GeoScience 2018) concludes that a large portion (depicted in Figure 12 of Kenney GeoScience 2018) of the watershed feeding the Mule SMZ would be disrupted by the Project. The western portion of the dune system located within the Project site could observe a decrease in windblown sand, depending on the construction design. The windblown sand source washes for the Northern Mule SMZ would be avoided by the Project and windblown sands would continue to be generated over the lifetime of the facility. The Central and Western Mule SMZs would be minimally impacted by the Project. As depicted in Figure 12 of Kenney GeoScience 2018, the Project would avoid the majority of washes and ponding areas contributing to local SMZs.

Windblown sand is needed to maintain desert dunes, a sensitive vegetation community and habitat for special-status species such as the Mojave fringe-toed lizard. Active washes play a role in local sand transport cycles (Kenney GeoScience 2018) by causing the erosion and transport of sand in a downstream direction powered by the movement of water. When the washes dry after brief seasonal rainfall, this loose sand can then be picked up and moved by the wind, helping to sustain the windblown sand dune. The Project would impact 91.2 acres of active washes, based on mapping of CDFW jurisdictional areas. However, windblown sand deposition and migration rates, relative to other dune systems, are very slow for all dune systems within and adjacent to the Project site (Kenney GeoScience 2018), suggesting that impacts resulting from Project site development would require decades or more to manifest. Impacts to sand movement would be minimized by avoidance of the larger washes that occur between the solar array fields.

The Project would result in the loss or alteration of approximately 90.6 acres of unvegetated ephemeral washes and 1.2 acres of riparian microphyll woodland habitat (blue palo verde–ironwood woodland) through grading, disturbance, site development, and access roads (A full copy of the RE Crimson Jurisdictional Delineation Letter Report is provided in Appendix I.2). These impacts would require a Streambed Alteration Agreement[9] with the CDFW, in accordance with California Fish and Game Code Section 1600 et seq. Although without major changes to the topography the Project would not prevent water from continuing to flow across the site, the partial removal of vegetation and installation of roads and infrastructure would be expected to result in minor changes to site hydrology. Additionally, road crossings at the large washes have the potential to result in erosion and hydrology alterations. Equipment and materials during construction and operations have the potential to pollute water on- and off-site by introducing hazardous materials that could leak or be washed into waters and by breaking the soil crust and accelerating erosion. On- and off-site CDFW-jurisdictional drainages would be susceptible to similar impacts to those described above for vegetation communities. Collectively, direct and indirect effects to jurisdictional waters would be adverse without mitigation. Under Mitigation Measure BIO-19, implementation of buffers around microphyll woodlands and mitigation for loss of vegetation within and along

[9] A Streambed Alteration Agreement is a type of permit issued by CDFW that includes measures necessary to protect existing fish and wildlife resources.

CDFW-jurisdictional drainages would reduce Project impacts. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

Collectively, these effects are adverse without mitigation. The following mitigation measures would reduce impacts to vegetation communities: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-10 (Debris and Trash Disposal); BIO-14 (Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-17 (Worker Environmental Awareness Program (WEAP)); BIO-18 (Vegetation Communities Restoration and Compensation); and BIO-19 (Riparian Habitat). Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### *State and Federal Wetlands*

The Project would not impact state wetlands or federal wetlands or waters, as the U.S. Army Corps of Engineers confirmed in its Approved Jurisdictional Determination that no waters of the United States occur on the Project site (Appendix U.4).

### *Special-Status Plants*

No plant species listed under FESA or CESA would be affected by the Project. Four special-status plant species were detected within the Project site: Harwood's eriastrum, desert unicorn plant, ribbed cryptantha, and Utah vine milkweed. Project-related construction activities such as grading would result in the permanent loss of special-status plant individuals, seed banks, and suitable habitat. Direct special-status plant impacts are summarized in Table 3.3-8 below. Two additional special-status plant species, Harwood's milkvetch and Abrams' spurge, are presumed within the vicinity of the Project site and could be indirectly impacted. Because the Project would avoid directly impacting the majority of local special-status populations and leave hundreds of previously recorded individuals undisturbed, it is expected that these special-status plant populations would persist after development of the Project. Impacts to special-status plants would be further reduced through flagging of environmentally sensitive areas and micrositing of Project linear components and compensation for direct impacts under Mitigation Measure BIO-20. General impacts and mitigation described for vegetation communities would also be applicable to special-status plants, including introduction of non-native exotic species, unmitigated runoff and sedimentation, erosion, fugitive dust, and unauthorized access outside of designated disturbance areas.

During operations, the Project could affect seed dispersal for special-status plants that may rely on wind dispersal of seeds, such as Harwood's eriastrum. The Project would include numerous structures that could act as physical barriers and collect seeds in locations that may not provide suitable growing conditions, such as beneath solar panels. Due to genetic exchange through winged pollinators, effects to seed dispersal are not expected to affect genetic exchange for special-status plants (i.e., pollen would be moved by winged pollinators even if seed movement is reduced, providing genetic exchange between populations).

In addition to these effects, special-status plants are also susceptible to the habitat degradation effects described above for vegetation communities. Collectively, these general habitat degradation effects would be substantial and adverse without mitigation.

The following mitigation measures would reduce impacts on special-status plants: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-10 (Debris and Trash Disposal); BIO-14 (Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-18 (Vegetation Communities Restoration and Compensation); BIO-17 (Worker Environmental Awareness Program (WEAP)); and BIO-20 (Special-Status Plant Avoidance, Minimization, and Compensation). Mitigation would avoid and minimize potentially adverse effects.

**TABLE 3.3-8[5]**
**SPECIAL-STATUS PLANT IMPACTS**

| Species | Status[1] | Project Site[2] (count) | Project Site and Vicinity[3] (total count) | Percent within the Project Site |
|---|---|---|---|---|
| Harwood's Milkvetch | 2B.2, NECO SS | 0 | 164 | 0% |
| Ribbed Cryptantha[4] | 4.3 | 33,253 | 46,385 | 72% |
| Harwood's Eriastrum[4] | 1B.2, BLM S | 428 | 7,501 | 5% |
| Abram's Spurge[4] | 2B.2 | 0 | 11,846 | 0% |
| Utah Vine Milkweed | 4.2, NECO SS | 105 | 932 | 11% |
| Desert Unicorn Plant | 4.3, NECO SS | 11 | 504 | 2% |

NOTES:
1 Status Designations:

*California Rare Plant Rank (CRPR):*
1A = Plants presumed extinct in California
1B = Plants rare and endangered in California and throughout their range
2 = Plants rare, threatened, or endangered in California but more common elsewhere in their range
3 = Plants about which more information is needed; a review list
4 = Plants of limited distribution; a watch list
0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

BLM = Bureau of Land Management
S = Sensitive
NECO = Northern and Eastern Colorado Desert Coordinated Management Plan
SS = Special-status species
2 Based on the greatest count of individuals detected during surveys within the Project site
3 Based on the greatest count of individuals detected during surveys of areas of the larger Sonoran West survey area.
4 Previously recorded occurrences and counts of these annual species may differ from locations and counts at the time that impacts occur, but are expected to be generally representative.
5 Table numbers may differ from BRTR due to Spring 2019 Rare Plant data and analysis of the GIS data.

## *Special-Status Wildlife*

The Project has the potential to impact wildlife listed under both FESA and CESA (desert tortoise, Yuma Ridgway's rail, southwestern willow flycatcher, western yellow-billed cuckoo, and least Bell's vireo); wildlife listed only under CESA (Arizona Bell's vireo, Swainson's hawk, elf owl, Gila woodpecker, willow flycatcher, and bank swallow); and additional special-status wildlife that are not listed under FESA or CESA (see Table 3.3-5 above). Potential impacts to avian species that only have potential to occur as non-resident migrants, including Yuma Ridgway's rail, southwestern willow flycatcher, willow flycatcher, western yellow-billed cuckoo, Arizona Bell's vireo, least Bell's vireo, Swainson's hawk, elf owl, Gila woodpecker, and bank swallow, are discussed collectively under the Special-Status and Migratory Birds section below. Migrant species are expected to occur only during migration or dispersal and are likely to use the Project site only for occasional stopover, foraging, or shelter during migration.

### General Impacts and Mitigation

Resident and foraging special-status wildlife would be affected by habitat degradation and loss effects within the 2,504.4 acres of native habitat on-site (excluding the 0.25 acre of developed area consisting of paved road). Loss of foraging habitat and cover would result from grading, crushing, and grubbing during construction, vegetation trimming, and maintenance during operations. Burrows, vegetation, and microtopographic features would be reduced within the Project site. Reduced vegetation would be available as forage for herbivorous species and would subsequently reduce the prey availability for predatory species. Additional habitat degradation could result from vehicle trespass or improper materials staging, hazardous spills and trash, airborne dust, sedimentation and erosion, wildfire risk, spread of exotic species, and disruption of sand movement and transport processes. As discussed above under Vegetation Communities, these effects would be reduced by the implementation of Mitigation Measures AQ-1, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-10, BIO-14, BIO-15, BIO-16, and BIO-17.

Additional effects could also occur as a result of collisions with Project vehicles, equipment, and project facilities; entrapment in pits or trenches; attraction to work areas due to ponded water; toxicity from hazardous materials spills; predator subsidizing, toxicity, or entanglement hazards posed by trash and construction debris; wildlife injury or harassment by Project workers or their pets; and impacts related to unauthorized activities outside of designated work areas. Under Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-17, the Project Biologist and biological monitors would implement measures to avoid and minimize impacts, and workers would receive WEAP training. General wildlife-vehicle collision hazards would be reduced by implementing speed limits and ensuring Project vehicles remain in designated areas under Mitigation Measure BIO-6. Prevention of ponding during dust control measures and proper trash disposal under Mitigation Measures BIO-9 and BIO-10, respectively, would reduce the potential for wildlife to be attracted to active construction areas and potentially injured by vehicles or trapped in construction areas. The restriction of pets and firearms under Mitigation Measure BIO-11 would reduce the potential for harassment of wildlife and prevent exposure to disease or injury from pets. Backfilling and monitoring of trenches and inspection of pipes under Mitigation Measure BIO-12 would reduce the potential for wildlife entrapment and injury during construction. These general effects would be adverse without mitigation. The following measures are applicable to special-status wildlife for impact minimization and avoidance.

The following mitigation measures would reduce impacts as specified in the detailed resource-specific analyses below: BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-6 (Vehicle Access and Speed Limits); BIO-9 (Prevent Ponding); BIO-10 (Debris and Trash Disposal); BIO-11 (Pets and Firearms); BIO-12 (Wildlife Entrapment Avoidance); BIO-17 (Worker Environmental Awareness Program (WEAP)). These mitigation measures would reduce but not eliminate substantial adverse effects for desert tortoise, Mojave fringe-toed lizard, Couch's spadefoot, western burrowing owl, golden eagle, special-status and migratory birds, desert kit fox, American badger, and special-status bat species; these are discussed below.

### Desert Tortoise

Project construction may result in impacts to desert tortoises including direct impacts from vehicle collision strikes (during construction and O&M), permanent destruction of burrows, and permanent loss of up to 2,504.4 acres of desert tortoise habitat that could be used for breeding, feeding, and shelter. The 2,504.4 acres of habitat loss constitutes a relatively small portion (0.16 percent) of the 1,604,900 acres of desert tortoise habitat modeled within the Cadiz Valley and Chocolate Mountains ecoregion subarea of the DRECP.

Prior to construction, permanent desert tortoise exclusion fencing would be installed around the Project site as prescribed under Mitigation Measure BIO-22, and a pre-construction clearance survey, as prescribed under Mitigation Measure BIO-23, would be conducted under the supervision of an Authorized Biologist as prescribed under Mitigation Measure BIO-21 to remove tortoises from the construction area prior to grading and to reduce the potential for tortoises to be crushed during construction. Direct habitat loss impacts would be mitigated under Mitigation Measure BIO-26 through the provision of a 1:1 mitigation ratio.

The Project facilities would affect desert tortoise local movement and dispersal; however, all current Project alternatives would not impact microphyll woodlands or the large washes between the solar array fields. Indirect effects could result from increased predation on juvenile tortoises by birds if new structures such as power poles, towers, or fencing are used as perches or nest sites, or if the Project supplements common raven populations with trash or standing water. Raven populations would be managed and monitored under Mitigation Measure BIO-25 (Raven Monitoring, Management, and Control Plan). A full copy of the Raven Monitoring, Management, and Control Plan is provided in Appendix I.11.

Desert tortoises have the potential to be impacted by herbicide applications during the operations period. However, the chemicals chosen (glyphosate and triclopyr or a similar alternative) have been identified for use due to low likelihood of toxicity to wildlife species, in particular desert tortoise, as analyzed in BLM's 2007 Vegetation Treatments Programmatic Environmental Impact Statement (see Appendix I.10, Weed Management Plan).

In addition to these effects, the general effects described above for resident and foraging special-status wildlife are also likely to adversely affect the desert tortoise. Adverse effects to desert tortoises would be reduced through monitoring and oversight by a desert tortoise-authorized biologist (BIO-21), exclusion fencing to prevent tortoise entry into the construction and O&M areas, clearance surveys and a translocation plan to remove and relocate tortoises within the exclusion area, and the provision of compensatory mitigation for habitat loss (BIO-26).

In addition to mitigation measures provided above for general wildlife impacts, the following mitigation measures would reduce impacts to desert tortoises: BIO-21 (Desert Tortoise Authorized Biologist (AB)); BIO-22 (Desert Tortoise Exclusion Fence); BIO-23 (Desert Tortoise Pre-Construction Clearance Surveys); BIO-24

(Resource Agency Notifications); BIO-25 (Raven Monitoring, Management, and Control Plan); and BIO-26 (Desert Tortoise Compensatory Mitigation).

### Mojave Fringe-Toed Lizard

Permanent direct impacts to Mojave fringe-toed lizard habitat would result from Project construction and would include the loss of individuals, occupied breeding and foraging habitat, and potentially suitable breeding and foraging habitat, as summarized in Table 3.3-9. The Project site is considered occupied by Mojave fringe-toed lizards as 414 observations of Mojave fringe-toed lizards and 138 observations of their signs were detected during focused surveys in 2012 within the Project site. Observations of Mojave fringe toed lizards were also recorded during 2016, 2017, and 2018 surveys.

**TABLE 3.3-9**
**ACREAGE IMPACTS TO MOJAVE FRINGE-TOED LIZARD HABITAT**

| Habitat Type | Solar Array Fields (acres) | Gen-tie and Access Roads (acres) | Project site total (acres) |
|---|---|---|---|
| Occupied Dune Habitat | 0 | 25.2 | 25.2 |
| Occupied Non-Dune Habitat[1] | 142 | <0.1 | 142 |
| Potentially Suitable Dune Habitat | 0 | 4 | 4 |
| Potentially Suitable Non-Dune Habitat | 369 | 5.4 | 374.4 |
| **Acreage Totals** | **511** | **34.6** | **545.6** |

NOTE:
1 Non-dune habitat consists of portions of the following vegetation community types: Creosote Bush—White Bursage—Ocotillo Association; Creosote Bush—White Bursage Scrub; Creosote Bush—White Bursage/Big Galleta Grass Association; Creosote Bush Scrub; and White Bursage Scrub.

Direct impacts to Mojave fringe-toed lizard would also result from an increase in vehicle traffic during construction and operation, and, consequently, an increase in the potential for vehicular strikes of this species. The main Project access road, Powerline Road, passes through multiple active sand dune areas that are occupied by Mojave fringe-toed lizards. These lizards are routinely observed basking on Powerline Road. General wildlife-vehicle impacts are discussed above under General Impacts and Mitigation. In *the Mitigation Monitoring, Compliance and Reporting Program Devers–Palo Verde No. 2 Transmission Line Project Final Report* (Aspen Environmental 2014), it is noted that during construction of the Colorado River Substation and its access road, an unexpectedly high rate of mortalities (over 103) was occurring to Mojave fringe-toed lizards with the majority being attributed to vehicular causes. To account for the high vulnerability of this species to vehicle-related mortalities and minimize this effect, BIO-25 includes measures to reduce speeds and provide additional monitoring to ensure the effectiveness and implementation of measures during the active season.

Permanent indirect impacts to Mojave fringe-toed lizards may occur from increased avian predation, such as common ravens and loggerhead shrikes, associated with the construction of new elevated perching sites (e.g., new transmission line towers, perimeter fencing). This effect is addressed above under the Desert Tortoise section and would be reduced by Mitigation Measure BIO-25.

Indirect impacts to Mojave fringe-toed lizard habitat could result from disruption of sand transport processes which could result in effects to dune habitat off-site which are further discussed under Vegetation Communities. Mitigation Measure BIO-28 would ensure Project roads remain at-grade to minimize the disruption of sand movement. Mitigation Measure BIO-28 would also require compensatory mitigation for direct habitat loss.

Adverse effects to Mojave fringe-toed lizard would be reduced with implementation of the general wildlife mitigation measures (to reduce vehicle mortality and other effects), BIO-25 to reduce predation effects, and BIO-28 to reduce habitat loss effects.

### Couch's Spadefoot

Large washes with the potential to form breeding ponds for this species would be avoided and outside the Project permit area, with the exception of road crossings. There is a potential for vehicle-related mortality during construction and operation within washes and in adjacent uplands. If these wash crossings are not properly maintained and become rutted or form pools, this could increase the risk of vehicle-related impacts to the species.

Temporary direct impacts may occur to Couch's spadefoot, if present, because construction vibration may cause toads to come aboveground during suboptimal periods and perish due to desiccation, predation, or crushing by vehicles. This is due to a similarity between the low frequency sound of rain on the desert ground—which draws Couch's spadefoot out of their deep burrows (Dimmitt and Ruibal 1980, as cited in AECOM 2019)—and the noise from construction equipment.

Under Mitigation Measure BIO-27, the potential for Couch's spadefoot breeding habitat during construction would be monitored and, if breeding ponds become established within or adjacent to the Project site, avoidance and minimization measures would be implemented in accordance with the Project's Couch's Spadefoot Toad Protection Plan (Appendix I.9).

The potential transport of sediment from the Project site to areas downstream of the site during heavy rains and flooding could result in permanent, indirect impacts on Couch's spadefoot habitat outside the Project site. Similarly, permanent, indirect impacts to habitat caused by changes in drainage patterns could potentially alter off-site habitat. These habitat degradation effects and their mitigation are further discussed under Vegetation Communities and Jurisdictional Waters. Implementation of Mitigation Measure BIO-27 (Couch's Spadefoot Protection Plan) would reduce adverse effects by monitoring the formation of potential breeding ponds and implementing protection and avoidance measures if breeding ponds form during the construction period. This plan is provided in Appendix I.9.

### Western Burrowing Owl

The Project would result in permanent loss of 2,504.4 acres of burrowing habitat. This represents 0.53 percent of the 475,000 acres of burrowing owl habitat modeled within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP. No burrowing owls were found breeding on the Project site; however, the site did contain sign that may have resulted from fall migrants or potential winter residents. Based on results from the surveys there will be no direct effects to active breeding habitat. In addition to effects related to habitat loss, burrowing owls may be susceptible to power line collision impacts collectively discussed under the Special-Status and Migratory Birds section below. Under Mitigation Measure BIO-29 (Burrowing Owl Management Plan) (see Appendix I.6) pre-construction surveys would be conducted to ensure burrowing owls are not present prior to grading and construction. If burrowing owls are present, exclusion and monitoring would be implemented in accordance with the plan to ensure minimization and avoidance of impacts to burrowing owls. Implementation of Mitigation Measure BIO-29 (Burrowing Owl Management Plan) (see Appendix I.6), would reduce adverse effects to burrowing owls by requiring pre-construction surveys, burrow closure, and potential relocation to avoid direct mortality of burrowing owls on the Project site, as well as compensatory mitigation if owl relocation is required.

### Golden Eagle

Construction would result in permanent direct impacts on 2,504.4 acres of foraging habitat for golden eagle. This represents a relatively small portion (0.19 percent) of the 1,283,000 acres of golden eagle foraging habitat modeled within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP. The Project could affect nesting success of golden eagles if foraging habitat were removed within the vicinity of nest sites. However, these effects would not be substantial because: (1) the RE Crimson Project is over 5 miles from the closest known golden eagle nest; (2) over multiple years of surveys, a single golden eagle kill site was recorded, and no golden eagles were directly observed on the Project site; and (3) the Project would result in the loss of less than 2 percent of existing foraging habitat (based on existing undeveloped lands and fallow agricultural lands) within a 10-mile buffer of the Project site and the 10-mile buffers surrounding the nearest nesting territories within the Little Chuckwalla and McCoy Mountains. In addition to effects related to habitat loss, golden eagles may be susceptible to the collision and electrocution impacts collectively discussed under Special-Status and Migratory Birds. These effects would be reduced through Mitigation Measure BIO-32 (Bird and Bat

Conservation Strategy [BBCS]), which incorporates guidelines for reducing avian electrocution and collision hazards (i.e., in APLIC 2006 and 2012). The BBCS is provided in Appendix I.5.

### Special-Status and Migratory Birds

Special-status birds include the bird species discussed above as well as additional species listed in Table 3.3-5: golden eagle, short-eared owl, long-eared owl, burrowing owl, ferruginous hawk, Swainson's hawk, Vaux's swift, mountain plover, northern harrier, western yellow-billed cuckoo, olive-sided flycatcher, yellow warbler, southwestern willow flycatcher, willow flycatcher, prairie falcon, American peregrine falcon, yellow-breasted chat, loggerhead shrike, Gila woodpecker, elf owl, Lucy's warbler, American white pelican, purple martin, vermillion flycatcher, Yuma Ridgway's rail, bank swallow, Bendire's thrasher, Crissal thrasher, Arizona Bell's vireo, least Bell's vireo, and yellow-headed blackbird.

Resident bird species, such as the loggerhead shrike and LeConte's thrasher, would be affected by the loss of 2,504.44 acres of potential foraging and nesting habitat as well as the potential loss of eggs and young. Injury or death of birds would most frequently occur during the vegetation clearing stage by impacting eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Additionally, construction-related noise has the potential to cause migratory bird nest abandonment in those areas adjacent to each disturbance area. Nesting bird impacts would be reduced with the implementation of the Nesting Bird Management and Monitoring Plan (see Mitigation Measure BIO-31), which includes conducting pre-construction nesting bird surveys, creating nest avoidance buffers until nests are inactive, and nest monitoring to avoid loss of eggs and young. Non-nesting, foraging species, such as the ferruginous hawk, would be affected by the loss of foraging habitat. Foraging migrant species would be affected to a lesser extent than foraging resident species because their use of the site is expected to be more opportunistic and temporary. Additionally, the adverse effects of habitat loss to nesting and foraging special-status bird species would be reduced by the provision of similar habitat as part of desert tortoise compensatory mitigation under BIO-26.

As identified in the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Avian Protection on Power Lines (2006), several factors attract raptors and other birds to power lines, which under certain circumstances leads to avian electrocution, such as when a bird simultaneously contacts electrical equipment either phase-to-phase or phase-to-ground, resulting in injury and mortality. Substantial adverse avian mortality and injury effects from electrocution that may result from the addition of new power lines on the Project site would be reduced through Mitigation Measure BIO-32 (Bird and Bat Conservation Strategy [BBCS]), which incorporates APLIC's guidelines for avoiding and reducing avian electrocution hazards, such as separating lines so that their distance is greater than a bird's wingspan or length.

Flyover migrant species, such as the Yuma Ridgway's rail and American white pelican, are not expected to use the site for foraging, but may be affected by the collision risks described below.

Currently, there are no power lines within the majority of the Project site, apart from power lines around the Colorado River Substation (CRS). The installation of up to 6,000 feet of new power lines along the gen-tie line, inverters, transformers, and other infrastructure associated with the electrical collection system, as well as a 100-foot monopole communications tower, may present collision hazards for birds. Bird collisions with elevated structures, such as communications towers, are well documented and estimated to account for 4 to 5 million annual bird fatalities per year, with a correlation between mortalities and tower height and type of lighting (Longcore et al. 2012). Mitigation Measure BIO-32 requires incorporation of APLIC design guidelines for power lines (i.e., in APLIC 2012) as well as USFWS's communication tower guidance (2018) and the Federal Communications Commission's Opportunities to Reduce Bird Collisions with Communications Towers While Reducing Tower Lighting Costs (2017). These measures would ensure that the Project would not result in substantial adverse effects related to the potential for avian collisions with above ground lines, wires, fences, and the communications tower. Neotropical migrants, a group which includes willow flycatchers and southwestern willow flycatchers, are especially susceptible to attraction to lighted structures (Longcore et al. 2012). These potential effects would be reduced by Mitigation Measures BIO-13 and BIO-32, which include lighting guidelines to minimize avian collision risk.

In addition to the potential risks from power lines described above, comments on the Draft EIS/EIR/PA expressed concern that Project power lines could create electromagnetic fields (EMFs) that may be harmful to breeding birds. EMFs are described in detail in Section 3.8, Hazards and Hazardous Materials, and their potential to cause human health effects is considered to be very low based on available scientific information. Similarly, scientific information about the effects of EMFs on breeding birds indicates that birds that are only transiently associated with power lines sustain limited exposure to EMFs, and that in general, such exposure is not associated with adverse effects on reproductive success (Fernie and Reynolds 2005). The power lines internal to the Project site would be low-voltage and would not generate substantial EMFs outside of the site. Given the short length of the gen-tie line and its presence near multiple other power lines and the Colorado River Substation, where no raptor nests were identified on existing poles or other infrastructure during surveys, it is unlikely that the gen-tie would attract breeding birds (such as by providing nest sites for raptors), or that birds would have any more than transient exposure to Project-related EMFs. Therefore, effects from Project-related EMFs on breeding birds would be minor to negligible.

Data from other photovoltaic solar projects in Southern California (Desert Sunlight and California Valley Solar Ranch) indicate that birds are also susceptible to collisions with solar panels (Watson et al. 2016; Ironwood Consulting, Inc. 2014). The causal mechanism for bird collisions with panels is not clear. While the causal mechanism is not known and is under investigation at other facilities, what is known is there is some kind of attractant or risk at solar facilities that results in avian mortalities at a higher rate at solar facilities as compared to background mortality rates on non-developed desert lands. Presently, one hypothesis regarding why birds may collide with panels is the idea that birds, particularly water-dependent species, may be attracted to solar panels, mistaking them for water features. These occurrences could lead to collision or other harm (e.g., strandings of water birds). However, this hypothesis has not yet been tested. Therefore, the causal mechanism for bird collisions with solar panels is presently unknown and it is not possible to determine if the conditions present at the Project site would facilitate an attraction by water-dependent birds and/or what level of impacts may occur. While the causes of avian injuries and fatalities at commercial-scale solar projects are being evaluated, uncertainty remains because: (1) mortality data has been collected over a relatively short period and still is being evaluated; (2) in many cases, the cause of death is not clear; and (3) mortality information from one project location is not necessarily indicative of the mortality information that might be found at another project location. Collectively and conservatively in light of related uncertainty, these effects would be substantial and adverse without mitigation. These potential effects would be reduced by Mitigation Measures BIO-31 (Nesting Bird Management and Monitoring Plan) and BIO-32 (BBCS). These plans are provided in Appendix I.5 and I.7. The BBCS requires a minimum of three years of post-construction mortality monitoring to study avian mortality impacts and inform adaptive management for this Project as well as mitigation and adaptive management for future projects.

### Desert Kit Fox and American Badger

There would be permanent direct impacts to 2,504.4 acres of occupied desert kit fox and American badger habitat resulting from construction of the Project, including the loss of burrows used for breeding (natal burrows), and satellite burrows. Adverse effects related to habitat loss would be reduced by the provision of similar habitat as part of desert tortoise compensatory mitigation under BIO-26, which occupies concurrent ranges and habitats as the desert kit fox and American badger. Wildlife movement effects, which are applicable to these species, are discussed under Wildlife Movement below.

These species may also be susceptible to effects described below under wildlife movement.

Without preventative measures, the presence of humans and potential passive relocation of desert kit foxes from the site could also result in the introduction and spread of diseases such as canine distemper. Under Mitigation Measure BIO-30, impacts to desert kit foxes and American badgers would be reduced by conducting pre-construction clearance surveys, den monitoring, passive relocation, and burrow excavation. Mitigation would avoid and minimize adverse effects.

### Special-Status Bat Species

The Project would result in a loss of 2,504.4 acres of potential foraging habitat, including up to 1.2 acres of impacts to microphyll woodlands that would be reduced by micrositing, for the following special-status bat species: pallid bat, Townsend's big-eared bat, western mastiff bat, western red bat, western yellow bat, California leaf-nosed bat, Arizona myotis, cave myotis, Yuma myotis, big free-tailed bat, and pocketed free-tailed bat. Bats may also be susceptible to the panel collision hazards described above under migratory birds. California myotis, pallid bat, Townsend's big-eared bat, and western mastiff bat mortalities were recorded at the Desert Sunlight project site (Ironwood Consulting 2014). Project lighting also has the potential to affect California leaf-nosed bats foraging within adjacent microphyll woodlands, because this species is known to be photophobic, as evidence by reduced roost emergence on nights with a full moon (Brown 2010). Foraging or commuting areas for this species may be of particular importance because the Project location is less than 3 miles from known roosting colonies[10] in the Mule Mountains, including the largest known winter colony of this species in the United States and also maternity colonies (Brown 2010). The Mule Mountains also contain one of only four known maternity colonies of cave myotis in California.

Impacts to bats resulting from Project lighting would be reduced under Mitigation Measure BIO-13, which limits the use of excessive lighting and requires that light be directed away from off-site habitat. The potential for collision-related impacts would be reduced by Mitigation Measure BIO-32, which requires that the Project follow the latest bird and bat collision avoidance guidelines for Project infrastructure. Collectively, these effects are significant without mitigation. Mitigation Measures BIO-13 (Lighting) and BIO-32 (BBCS) would reduce this impact. The BBCS is provided in Appendix I.5.

### *Wildlife Movement*

The Project site is located partially within a 5-mile-wide linkage (part of the desert linkage network) across Interstate 10 centered on Wiley's Well Road to connect the Mule and McCoy Mountains, as identified within the DRECP. This linkage requires wildlife to either directly cross Interstate 10 or cross beneath Interstate-10 at wash crossings to travel between the Mule and McCoy Mountains. Within this linkage, the nearest I-10 crossings to the Project site occur approximately 1.6 miles and 2.8 miles to the northeast. The siting of the Project would not divert wildlife away from key crossing points beneath I-10 or direct wildlife movement toward unsafe highway crossing locations. The majority of this linkage is within the Chuckwalla ACEC and Mule-McCoy Linkage ACEC and would be avoided by the Project; however, the development of the Project would reduce available habitat within the linkage area. The remaining width of the linkage area to the west would be approximately 2 miles wide between the Project and Ironwood State Prison to the west of the Project and a 1.2-mile-wide corridor would be available for wildlife to pass the project and access the I-10 crossing northeast of the Project. The Biological Opinion (Appendix I.13) concludes that the USFWS does not expect this loss of habitat to appreciably impact regional population connectivity, and anticipates that the Project would not appreciably diminish the distribution of the species.

Project site fencing, including tortoise exclusion fencing, would inhibit the movement of all but small terrestrial wildlife species across the Project site during construction and operations; however, the Project would avoid washes between the solar array fields, which would allow wildlife to move between the solar array fields without traveling around the entire Project site. Tortoise exclusion fencing would temporarily be installed during construction at these crossings and would temporarily impede movement of small terrestrial species during this time. Movement within the washes and near the site perimeter could also be impeded during both construction and operations as a result of edge effects associated with noise, light, and human disturbance; however, these effects are not expected to be substantial because undeveloped areas of over 1 mile wide are available around the site (with the exception of the immediately adjacent substation) that allow for the free movement of wildlife within the linkage area and providing multiple alternative routes for movement between the Mule and McCoy Mountains. Lighting effects would be further mitigated under Mitigation Measure BIO-13 (Lighting), which requires the use of glare shields and directing lighting away from off-site habitat. Regardless of these effects, a substantial amount of undeveloped land is available surrounding the Project site that would allow for continued wildlife movement between all areas surrounding the Project. With the exception of the substation, the nearest development surrounding the Project is the Ironwood State Prison 1.2 miles to the west.

[10] Roosting colonies are groups of bats of the same species roosting in proximity to each other and providing potential functions and advantages related to thermoregulation, predator avoidance, and mating.

### *Decommissioning*

Decommissioning effects are anticipated to be similar to those determined for the construction phase of the Project. The actual effects would be dependent upon the proposed decommissioning action and final use of the site. Applicable mitigation identical to that described for Project construction would be implemented during the decommissioning phase to avoid and minimize associated impacts. Collectively, these effects are substantial and adverse without mitigation. Mitigation Measure BIO-33 (Decommissioning Plan) and all applicable measures described for construction and operations would reduce this impact.

## 3.3.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (DEs) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.3-10 summarizes the change in effects to biological resources under Alternative B, by DE.

**TABLE 3.3-10**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1[1] | DE-2[2] | DE-3[3] |
|---|---|---|---|
| Vegetation Communities | 1,984-acre reduction in severity and duration of disturbance | 52.98-acre reduction in long-term disturbance | *Minor reduction* |
| Ephemeral Washes | *Reduction* | *Reduction* | *Reduction* |
| Special-Status Plants | *Reduction* | *Reduction* | *Minor reduction* |
| Special-Status Wildlife (overall) | *Reduction* | *Variable* | *Variable* |
| Desert Tortoise | *Reduction* | *Variable* | *No change* |
| Swainson's Hawk and Bank Swallow | *Reduction* | *Increase* | *Increase* |
| Mojave Fringe-Toed Lizard | *Reduction* | *Reduction* | *Minor reduction* |
| Couch's Spadefoot | *Minor reduction* | *Minor reduction* | *Minor reduction* |
| Western Burrowing Owl | *No change* | *Increase* | *No change* |
| Golden Eagle | *No change* | *Increase* | *No change* |
| Special-Status and Migratory Birds | *Reduction* | *Increase* | *No change* |
| Desert Kit Fox and American Badger | *Reduction* | *Minor reduction* | *No change* |
| Special-Status Bat Species | *No change* | *Minor increase* | *Minor increase* |
| Invasive Species | *Reduction* | *Reduction* | *Reduction* |
| Wildlife Movement | *Reduction* | *Reduction* | *Reduction* |

NOTES:
1 DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
2 DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
3 DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

The following resource-specific analyses address both construction and operation. Decommissioning is addressed at the end of this subsection.

### *Vegetation Communities*

Alternative B would directly and permanently impact the same vegetation community acreages as those described under Alternative A. However, adverse effects to vegetation communities would be reduced under Alternative B as a result of the reduced severity of ground disturbance associated with grading, trenching, and foundation installation.

Under Alternative B, more vegetation would remain in place, and there would be less disturbance to topsoil and biological soil crusts. Reduced ground disturbance would reduce the potential for dust, erosion, disruption of hydrology, the spread of non-native species, and disturbance to native seedbanks. According to the Plan of Development (Sonoran West Solar Holdings 2017), DE-1 would reduce the duration and severity of disturbance to an estimated 1,984 acres of native vegetation by trimming vegetation exceeding 18 inches for module installation; grading and grubbing limited to 5 percent in module field instead of traditional mowing, grubbing, and grading.

DE-2 would reduce the severity of impacts within 52.98 acres of native habitat by installing aboveground lines and pole foundations instead of trenching.

Reduced ground disturbance may occur within unvegetated ephemeral washes under Alternative B. Reduced ground disturbance would result in reduced effects from dust and erosion. Retaining residual ground cover and topsoil across the site may reduce changes to the drainage and runoff characteristics of the site that may indirectly affect unvegetated ephemeral washes. Driving across the features may cause minor inadvertent changes to the unvegetated waters; however, would not result in the loss of these features. Alternative B would not result in a reduction of impacts to microphyll woodlands. DE-3 may allow some washes to remain in place and follow existing paths by allowing the washes to flow beneath elevated support structures. Alternative B would not change adverse effects during operations. Despite the reduced severity as compared to Alternative A, effects under Alternative B would be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

Operational effects under Alternative B would be similar to those under the Project. The increased extent of transmission lines under alternative B would slightly raise the risk of wildfire; however, because of the low amount of fuel and wide spacing between shrubs, the potential for wildfire to result in widespread damage to vegetation around the site is relatively low. DE-1 would allow for vegetation to grow under panels, being maintained to no greater than 18 inches in height. On-site vegetation communities are expected to retain some level of residual habitat value following construction, despite the ongoing effects of vegetation trimming and shading. Despite the reduced impact as compared to Alternative A, effects under Alternative B would still be substantial and adverse without mitigation. Mitigation measures would be the same as Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### *State and Federal Wetlands*

No impacts on state or federal wetlands would occur, the same as under Alternative A.

### *Special-Status Plants*

Adverse effects to special-status plants would be reduced overall under Alternative B based on the reduced ground disturbance and residual habitat proposed under this scenario; however, because the locations of the reduced disturbance would be determined during construction, the extent of impact reduction under Alternative B cannot be quantified for special-status plants. Existing ground topography, soils, and vegetation would remain in a more natural state. By reducing the amount of ground disturbance, the indirect impacts from non-native species (which often flourish on disturbed soils), runoff, sedimentation, and erosion (or altered surface hydrology) would be substantially lower.

If present, fewer individual plants, including Harwood's eriastrum, desert unicorn plant, ribbed cryptantha, and Utah vine milkweed, would be removed by ground disturbance. Remaining plants and seeds would be permitted to grow underneath and around the modules. Vegetation communities would retain some residual habitat value for special-status plants, depending on the effects of shading and sheltering from rainfall by the modules and infrastructure. Minimal vegetation trimming would be conducted using hand techniques, and only particularly tall vegetation would require trimming. Vegetation below 18 inches would not be trimmed or modified and the special-status plant species known to occur on or near the Project site generally do not grow above 18 inches, with the potential exception of Utah vine milkweed (Jepson Flora Project 2019). Additionally, per BIO-20, construction and O&M crews would be trained to identify special-status plants likely to occur on-site and these species would be avoided by trimming and permitted to flower and set seed, thus contributing to the seedbank.

During O&M, vegetation would be maintained at a height of 18 inches, the same as under Alternative A; however, vegetation trimming within a larger area may be required due to the reduced initial disturbance under Alternative B. The special-status plants that would be affected by this activity otherwise have been extirpated if vegetation were not allowed to grow on site.

Reduced ground disturbance could increase the potential for the Project site to collect windblown seeds, resulting in more wind-dispersed seeds of special-status species, such as Harwood's eriastrum, collecting within the Project site and under solar panels, where growing conditions may not be suitable. However, these effects are not expected to differ greatly than that described under the Project (Alternative A). Despite the reduced severity as compared to Alternative A, effects under Alternative B would be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### *Special-Status Wildlife Species*

#### General Impacts and Mitigation

Alternative B may reduce adverse effects associated with the loss of habitat for some resident and foraging-migrant species by preserving residual habitat value under DE-1 and reducing the severity and duration of impacts within a portion of the site under DE-2 and DE-3. Alternative B would not reduce adverse effects associated with habitat loss for species excluded by Project fencing.

Reduced ground disturbance would allow for more vegetative cover to remain thereby reducing the potential for erosion, run-off, fugitive dust, and the spread of invasive non-native species. An increased risk of vehicle-related mortality to some special-status wildlife species along construction access roads because of their likely increased presence would occur under the vegetative cover. Alternative B. Construction of Alternative B would require less heavy equipment, but more labor-related traffic for a longer duration. Vehicle traffic under Alternative B is discussed in further detail in Section 3.15. Overall, construction traffic for Alternative B would be similar to that of the Project. Increased vehicle traffic would be required to perform custom fence and steel pile installation as well as vegetation trimming using hand techniques. This would result in an increased risk of vehicle-related mortality to wildlife during development of the Project site.

Overall, general impacts to special-status wildlife under Alternative B would be similar to those described under Alternative A, and these impacts would be substantial and adverse. The measures discussed in the following subsections are generally applicable to special-status wildlife for impact minimization and avoidance. Mitigation measures would be the same as Alternative A.

#### Desert Tortoise

Reduced on-site impacts under Alternative B are not expected to reduce impacts to desert tortoise during construction and operation because this species would be excluded from the Project site by fencing.

Alternative B could increase the risk of vehicle-related mortality due to increased vehicle traffic. DE-2 and DE-3 may result in an increased risk of juvenile tortoise predation by ravens due to the addition of elevated perch sites.

Overall, effects under Alternative B would be similar to those under Alternative A and would be substantial and adverse without mitigation. Mitigation measures as described under Alternative A would reduce impacts. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

#### Mojave Fringe-Toed Lizard

As discussed under the Alternative B General Impacts and Mitigation section above, Alternative B may reduce adverse effects related to habitat disturbance, primarily as a result of DE-1. Reduced ground disturbance (e.g., reduced soil compaction) in Mojave fringe-toed lizard habitat may maintain the soil characteristics that support Mojave fringe-toed lizards. Alternative B would reduce indirect habitat alteration effects to this species by retaining more natural soil and vegetation conditions that may benefit off- and on-site sand movement, when compared to Alternative A. Alternative B (DE-2 and DE-3) could increase the potential for predation by avian predators (e.g., common raven).

Alternative B would increase the potential for adverse effects from vehicle-related mortalities due to the increase in construction and operations traffic. This species is susceptible to vehicle-related mortality due to its tendency to freeze in place, and to bury itself beneath sand or bask on roads.

Overall, effects under Alternative B would be similar to those under Alternative A and substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Couch's Spadefoot

This species is susceptible to vehicle-related mortality along access roads at wash crossings and near washes. Reduced ground disturbance would reduce the potential for the Project to directly disturb spadefoots aestivating in upland areas near washes. Alternative B would increase the potential for adverse effects from vehicle-related mortalities due to the increase in construction and operations traffic.

Implementation of DE-2 and DE-3 would increase the potential for spadefoot predation by avian predators such as ravens, due to the construction of new elevated perching sites (transmission line towers and transformer platforms). However, the significance of raven predation on this species is not well documented. Couch's spadefoots are known to produce volatile skin secretions that may make them less palatable, and this species is more active at night than in the daytime, further reducing the likelihood that raven predation poses a substantial and adverse risk. Therefore, overall indirect effects are also expected to be reduced under Alternative B.

Overall, effects under Alternative B would be similar to those under Alternative A and substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Western Burrowing Owl

Overall, adverse effects to the western burrowing owl are expected to increase under Alternative B. Effects under Alternative B would vary by DE, as described below.

DE-1 and DE-3 would reduce or cause no change in direct effects on the western burrowing owl. Reduced grading and residual habitat value could reduce direct effects related to habitat loss. Reduced grading and the preservation of vegetation may permit limited use of the site for foraging, sheltering, and dispersal. However, the residual habitat value to this species under Alternative B is unknown, and increased habitat value and increased use of the site could result in increased vehicle and infrastructure collision risks. Vehicle collisions are identified as a potentially significant cause of burrowing owl mortality in the DRECP Plan Area (BLM 2005, as cited in BLM 2014).

As discussed under the Special-Status and Migratory Birds section below, DE-2 may result in an increase in collision risks; however, these adverse effects would be reduced by compliance with APLIC guidelines and other design measures under Mitigation Measure BIO-32.

Effects under Alternative B would be similar to those under Alternative A and would be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed under Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Golden Eagle

Adverse effects to golden eagles would increase under Alternative B. The reduced ground disturbance under Alternative B is expected to have a negligible effect, because this species is unlikely to forage within the solar fields, even with reduced ground disturbance. As discussed under the Special-Status and Migratory Birds section below, DE-2 may result in an increase in collision and electrocution risks. However, compliance with APLIC guidelines and other design measures under Mitigation Measure BIO-32 would reduce avian power line collision and electrocution effects. Impacts to golden eagles would not be substantial and adverse with mitigation incorporated.

Effects under Alternative B would be greater than those under Alternative A and would be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed under Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Special-Status and Migratory Birds

Overall, adverse effects on native birds, including special-status and migratory species, would increase under Alternative B. Residual vegetation left on-site under DE-1 may provide foraging and nesting value to certain species in a greater amount than under Alternative A. However, DE-2 could increase the collision and electrocution hazard for birds with the addition of 22 miles of aboveground electrical lines (instead of underground electrical conduit under Alternative A). Compliance with APLIC guidelines (i.e., 2006 and 2012) and other design measures under Mitigation Measure BIO-32 would reduce avian power line collision and electrocution effects because following these guidelines would make the wires more visible, reducing the risk of birds striking them, and would incorporate spacing guidelines that reduce the risk of electrocution.

Like Alternative A, Alternative B impacts would be substantial and adverse without mitigation. These potential effects would be reduced by Mitigation Measures BIO-31 (Nesting Bird Management and Monitoring Plan) and BIO-32 (Bird and Bat Conservation Strategy [BBCS]).

### Desert Kit Fox and American Badger

Adverse effects on desert kit fox and American badger under Alternative B would be similar to those under Alternative A. While Project site habitat impacts would be reduced under Alternative B, the Project site would be fenced and not available as habitat for these species. Implementation of mitigation would avoid and minimize potentially adverse effects.

### Special-Status Bat Species

Adverse effects to special-status bat species would be unchanged or slightly reduced under Alternative B. Reduced grading and an increase in vegetative cover may provide more insects and feeding resources for bats; however, the similar coverage with modules would limit foraging potential and the residual foraging habitat value of the Project site under Alternative B is unknown. Additionally, Alternative B would not reduce impacts to microphyll woodlands, which provide important foraging habitat for California leaf-nosed bats.

DE-2 has the potential to increase adverse effects to special-status bat species. The installation of additional transmission lines could pose a collision hazard to bats; however, there is a lack of documentation of bat collisions with stationary power infrastructure as opposed to non-stationary wind turbines. While stationary power lines pose a known risk to birds, particularly during nighttime migration flights, it is unknown whether a similar risk is posed to bats given their general use of echolocation to aid or replace sight for the purpose of navigation. However, certain foraging bat species, including pallid bats, are known to rely less on echolocation and engage in “silent” foraging to avoid alerting prey insects that can detect their echolocation calls (Schaub et al. 2008). This could potentially put these species at higher risk for collision with power lines. Overall effects under Alternative B would be similar to those under Alternative A and substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects, as described for Alternative A.

### Wildlife Movement

Adverse effects to wildlife movement under Alternative B would be similar to those under Alternative A. Regardless of the reduced habitat impacts, Project site fencing under Alternative B would still impede movement for medium and large terrestrial species across the Project site. Movement of small terrestrial wildlife such as rodents and reptiles may benefit from the additional forage and cover. resulting from reduced grading and vegetation removal. Overall, effects under Alternative B would be similar to those under Alternative A and would be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Decommissioning

Alternative B has the potential to result in the preservation of more vegetation and habitat function during and following construction than Alternative A and B. The more residual habitat value that exists during operations and into decommissioning, the faster the recovery of the site would be, should the site be reclaimed to native habitat. This would also reduce the time and effort needed to restore habitat value on the site for special-status species. Additionally, special-status plant populations and native and non-native seed banks will already be present on-site. The reduction in ground disturbance and grading would also reduce the effort needed to restore topography and drainage contours of the site, thereby reducing residual effects to ephemeral washes.

While adverse effects associated with decommissioning would be reduced under Alternative B, these effects would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed under Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### 3.3.4.3 Alternative C: Reduced Acreage Alternative

Alternative C would impact 2,083.5 acres (420.9 acres less than the 2,504.4-acre Project), as shown in Figure 2-4. The overall area of ground disturbance for the panel arrays, energy storage system, gen-tie corridor, and ancillary facilities would be 83 percent of the disturbance proposed under Alternative A; therefore, direct permanent impacts to vegetation communities and special-status plant and wildlife species habitats would be reduced. These impact reductions are listed in Table 3.3-11.

**TABLE 3.3-11**
**REDUCED IMPACT ACREAGE UNDER ALTERNATIVE C**

| Biological Resource | Alternative A (Project) and Alternative B | Alternative C | Impact Reduction under Alternative C |
|---|---|---|---|
| **Vegetation Communities (acres)** | 2,504.4 | 2,083.5 | 420.9 |
| Creosote Bush—White Bursage/Big Galleta Grass Association | 289.4 | 205.6 | 83.8 |
| Other Sonoran Desert Scrub Communities[1] | 2,184.9 | 1,791.8 | 393.1 |
| Blue Palo Verde—Ironwood Woodland | 1.2 | 1.2 | - |
| Desert Dunes | 29.2 | 1.75 | 27.45 |
| Riparian Woodland | 1.2 | 1.2 | - |
| **Unvegetated Ephemeral Washes (acres)** | 90.6[2] | 79.3[2] | 11.3[2] |
| **Special-Status Plant Species (individuals)** | | | - |
| Ribbed Cryptantha | 2,153 | 2,153 | - |
| Harwood's Eriastrum | 420 | 11 | 409 |
| Utah Vine Milkweed | 105 | 105 | - |
| Desert Unicorn Plant | 11 | 11 | - |
| **Desert Tortoise Habitat (acres)** | 2,504.4 | 2,083.5 | 420.9 |
| **Mojave Fringe-Toed Lizard Habitat (acres)** | 545.6 | 376.6 | 169 |

NOTES:
1 Includes Creosote Bush—White Bursage Scrub; Creosote Bush Scrub; White Bursage Scrub; Brittlebush Scrub; and Creosote Bush—White Bursage—Ocotillo Association
2 Ephemeral wash acreage is overlapping and not in addition to acreages mapped for other vegetation communities.

The following resource-specific analyses address both construction and operation. Decommissioning is addressed at the end of this subsection.

#### *Vegetation Communities*

Alternative C would reduce direct and permanent impacts to vegetation communities by the acreages listed in Table 3.3-11. Operation effects under Alternative C would be similar to those under the Project, but would be slightly reduced due to the slightly smaller operating footprint.

Under Alternative C, direct impacts to dune habitat would be substantially reduced, and indirect impacts resulting from disruption of sand transport would be reduced. Alternative C would avoid 11.3 acres of active washes that would be impacted under Alternative A. These washes may facilitate sand movement as part of the wind and water transport cycle. Additionally, Alternative C would avoid more of the Wiley's Well, Mule, and Northern Mule SMZs.

Alternative C would reduce direct and permanent impacts to unvegetated ephemeral washes by 11.3 acres, but would not change operation effects. During decommissioning and reclamation of the site, the reduction in ground disturbance and grading would reduce the effort needed to restore topography and drainage contours of the site. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### *State and Federal Wetlands*

No impacts on state or federal wetlands would occur, the same as under Alternative A.

### *Special-Status Plants*

Adverse effects to special-status plants would similar to Alternative A under Alternative C, except that Alternative C would avoid 409 out of the 420 Harwood's eriastrum individuals that Alternative A would affect. Harwood's eriastrum is an annual species. Previously recorded individuals of annual plant species would no longer be present at the time of Project construction. However, by avoiding locations where Harwood's eriastrum was previously recorded, Alternative C could avoid suitable habitat areas and seeds for these species. During operations, Alternative C would also reduce the potential for the Project to affect seed dispersal by reducing the overall development footprint. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation.

Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### *Special-Status Wildlife Species*

#### General Impacts and Mitigation

Alternative C would reduce impacts related to habitat loss by 420.9 acres for resident and foraging wildlife species. The reduced footprint may also result in a minor reduction in impacts associated with construction activities and vehicle traffic. Reduced ground disturbance would allow for more vegetative cover and would reduce the potential for erosion, run-off, fugitive dust, and the spread of invasive non-native species.

While reduced in scale, general impacts to special-status wildlife under Alternative C would be similar to those described under Alternative A, and these impacts are substantial and adverse. Mitigation measures are generally applicable to special-status wildlife for impact minimization and avoidance. Mitigation measures would be the same as prescribed for Alternative A.

#### Desert Tortoise

Overall, adverse effects to desert tortoises would be reduced under Alternative C. Alternative C would reduce direct disturbance to 420.9 acres of tortoise habitat. The reduced disturbance footprint would also facilitate tortoise movement for breeding and dispersal. Reduced use of heavy equipment and increased hand labor would also reduce the potential for mortality of tortoises that are not detected during clearance surveys.

While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Mojave Fringe-Toed Lizard

Adverse effects to Mojave fringe-toed lizard would be reduced under Alternative C. Alternative C would reduce impacts to Mojave fringe-toed lizard occupied or potentially suitable habitat by 169 acres. Alternative C avoids portions of the Wiley's Well Basin, Northern Mule, and Mule SMZs that would be developed under Alternative A, thereby also reducing direct and indirect impacts to species associated with dune habitat or sandy substrates, including the Mojave fringe-toed lizard.

While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Couch's Spadefoot

Alternative C could result in a minor reduction in the potential for vehicle mortalities of this species due to reduced vehicle traffic at wash crossings. No change in habitat impacts to Couch's spadefoot are expected under Alternative C. Alternative C does not avoid any additional major wash habitat that could form breeding ponds for this species. Impacts under Alternative C would be similar to those under Alternative A and substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Western Burrowing Owl

Adverse effects to the western burrowing owl would be reduced under Alternative C. The reduced footprint would provide more remaining habitat and potential burrow sites and the amount of infrastructure posing a collision hazard would be slightly reduced. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measure would avoid and minimize potentially adverse effects.

### Golden Eagle

Adverse effects to the golden eagle would be reduced under Alternative C. The reduced footprint would provide more foraging habitat and the amount of solar panel infrastructure posing a collision hazard would be slightly reduced. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed under Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Special-Status and Migratory Birds

Adverse effects to special-status and migratory birds would be reduced under Alternative C. The reduced footprint would provide more foraging and nesting habitat, reduce risks to nesting birds, and reduce the amount of infrastructure posing a collision hazard. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. These potential effects would be reduced by Mitigation Measures BIO-31 (Nesting Bird Management and Monitoring Plan) and BIO-32 (Bird and Bat Conservation Strategy [BBCS]).

### Desert Kit Fox and American Badger

Adverse effects to the desert kit fox and American badger would be reduced under Alternative C. The reduced footprint would provide more remaining habitat for hunting, movement, and potential burrow sites. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Special-Status Bat Species

Adverse effects on special-status bats would be slightly reduced under Alternative C. The reduced footprint would provide more remaining foraging habitat. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

#### *Wildlife Movement*

Adverse effects on wildlife movement would be reduced under Alternative C. Where Alternative C applies a 0.25-mile buffer around Harwood's eriastrum occurrences, this alternative would widen portions of the avoided areas around washes between the solar array fields. The widening would not occur along the entire length of the wash corridors and the narrowest access point would remain at approximately 200 feet, but Alternative C would facilitate wildlife movement through these areas by providing more natural habitat along the avoided washes.

The approximately 0.25-mile footprint reduction along the northwestern project boundary and within the linkage area would provide more space for wildlife movement around the Project site. While impacts under Alternative C would be less than those under Alternative A, impacts would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

#### *Decommissioning*

Decommissioning impacts under Alternative C would be similar to those under Alternative A, but within a smaller footprint. While adverse effects associated with decommissioning would be reduced under Alternative C, these effects would still be substantial and adverse without mitigation. Mitigation measures would be the same as prescribed for Alternative A. Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### 3.3.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, the site would remain undeveloped and the existing environmental setting would be maintained. No direct or indirect impacts on biological resources would occur.

## 3.3.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a substantial and adverse impact on biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e.g., oak trees or California walnut woodlands).

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### 3.3.5.1 Alternative A: Proposed Action

**Impact 3.3.5a: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS? (*Less than significant with mitigation incorporated*)**

As described in detail in Section 3.3.4.1, the Project could have substantial adverse effects on special-status species due to direct impacts, habitat modification, and other indirect impacts; these could result in significant impacts on special-status species. However, these impacts would be substantially avoided or reduced, or compensation required where impacts cannot be avoided or reduced, such that after mitigation is incorporated, the impacts would be less than significant.

With respect to special-status birds, individual birds may be injured or killed due to collisions or interactions with solar panels or other infrastructure. Data from other solar projects in Southern California, including PV projects (Desert Sunlight, California Valley Solar Ranch, Blythe Solar Power, McCoy Solar Power, Solar Gen 2, Campo Verde, ISEC West, and ISEC South) and solar thermal (Genesis, Mojave, and Ivanpah), indicate that birds are susceptible to collisions with solar panels, structures, and lines (Walston et al. 2016; Ironwood Consulting, Inc. 2014; Western Ecosystems Technology, Inc. 2019; Heritage Environmental Consultants, LLC 2014 and 2015; Dudek 2018 and 2019). Federal and State listed species (Ridgway's rail, bank swallow, willow flycatcher, peregrine falcon), along with several species of special concern have been found dead on these sites during systematic avian mortality monitoring. These data represent what has been documented within the portion of the solar site where surveys were performed and only what has been found during those surveys or incidentally. Therefore, the data do not represent every species or individual bird killed on a site. At these solar project sites, avian mortality surveys were performed for 2 to 3 years at the start of operation, although the projects have an average life span of 30 years. The purpose of the surveys is to determine the total number of birds killed using statistical estimation and may not capture all listed and special-status species killed. Therefore, due to the design of the mortality surveys performed on existing projects it is probable that additional listed and special-status birds were killed but not found.

Table 3.3-5 lists 9 federal or State listed species and 18 species of special concern that are either present or presumed present on the Project site as migrants. Flyover migrants may not normally land on the Project site, but the site could be an attractant and on rare occasions may serve as a stop-over location for those species. The causal mechanism for bird collisions with photovoltaic panels is not clear, however there is sufficient data from existing projects that some level of avian fatalities will occur on site during the life of the Project and there is the potential that some of the fatalities will be listed or special status species. Although the overall Project size has been reduced compared to the original application, as described in Section 1.1.2, and Alternative C would reduce the size further (as evaluated in Section 3.3.5.3), there are no further, feasible avoidance and minimization measures that would eliminate the risk of collision and meet most of the basic Project objectives because the risk appears to be inherent to the infrastructure necessary to produce renewable electricity.

CDFW's analysis of the Project's impacts on avian species from collisions in the Draft EIS/EIR/PA found that greater than 1 and as many as 5 individuals from among the 27 species of listed or special-status birds from Table 3.3-5 have the potential to be killed on the Project site each year, based on monitoring data from existing solar PV projects. Based on these numbers, it estimated that the Project may kill up to 150 listed or special-status birds during the 30-year life of the Project. Although the populations of these species are recognized by the USFWS and/or CDFW as vulnerable to extinction or in decline, the estimated number of special-status bird individuals potentially lost each year from collision is not significant relative to the population sizes for each of these species. Species composition of dead or injured birds can vary depending on location and technology type. Currently there are only a handful of PV sites that have collected systematic data on avian mortality post construction. Additional information is needed to better understand the patterns and provide data on where the deceased bird migrated from and what impacts the loss of those individual birds have on the overall populations. Therefore, at present, there is not data indicating that the estimated loss of special-status species bird individuals would have a substantial adverse effect on the species' populations. The impact for purposes of CEQA, accordingly, is less than significant without mitigation. Implementation of otherwise required Mitigation Measure BIO-32, which includes the BBCS and facility design elements to reduce bird impacts, and required avian mortality monitoring for three years post-construction with adaptive management, would further reduce the identified less-than-significant impacts to the above-identified special-status birds.

Similar collision risks are also anticipated for other migratory birds, potentially including waterbirds, raptors, and songbirds, which are protected under the MBTA. The populations of such common, widespread birds are considered relatively secure, and the loss of few individual birds would not substantially reduce the overall population. The general impact mechanism and potential hazards to special-status birds and migratory birds during Project operations is comparable between these groups, for the reasons discussed under Special-Status and Migratory Birds in Section 3.3.4.1, above. The impact for purposes of CEQA, accordingly, is less than significant without mitigation. Otherwise required implementation of Mitigation Measure BIO-32, Bird and Bat Conservation Strategy, would further reduce this less than significant effect on non-special status migratory birds.

As noted above, Table 3.3-5 includes species that are listed as threatened or endangered under the California Endangered Species Act. Take of these species is unlawful unless authorized by CDFW pursuant to Fish and Game Code, section 2081(b) or other applicable authorization. There are three species in Table 3.3-5 that are fully protected under California Fish and Game Code, section 3511 (peregrine falcon, golden eagle, and Yuma Ridgeway's rail). Take of fully protected species is prohibited, and CDFW cannot authorize take of these species except under circumstances that are not relevant to this Project (i.e., for necessary scientific research, or under an approved natural community conservation plan).

### Mitigation Measures

For impacts on special-status species due to direct impacts, habitat modification, and other indirect impacts: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-9 (Prevent Ponding); BIO-10 (Debris and Trash Disposal); BIO-11 (Pets and Firearms); BIO-12 (Wildlife Entrapment Avoidance); BIO-13 (Lighting); BIO-14 (Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-17 (Worker Environmental Awareness Program (WEAP)); BIO-18 (Vegetation Communities Restoration and Compensation); BIO-20 (Special-Status Plant Avoidance, Minimization, and Compensation); BIO-21 (Desert Tortoise Authorized Biologist); BIO-22 (Desert Tortoise Exclusion Fence); BIO-23 (Desert Tortoise Pre-Construction Clearance Surveys); BIO-24 (Resource Agency Notifications); BIO-25 (Raven Monitoring, Management, and Control Plan); BIO-26 (Desert Tortoise Compensatory Mitigation); BIO-27 (Couch's Spadefoot Protection Plan); BIO-28 (Mojave Fringe-Toed Lizard and Dune); BIO-29 (Burrowing Owl Management Plan); BIO-30 (Desert Kit Fox and American Badger Management Plan); and BIO-32 (Bird and Bat Conservation Strategy).

### Significance after Mitigation

This impact would be less than significant after implementation of the mitigation measures listed above.

**Impact 3.3.5b: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or US Fish and Wildlife Service? (*Less than significant with mitigation incorporated*)**

As described previously in Section 3.3.4.1, the Project could have a substantial adverse effect on riparian habitat (microphyll woodlands), ephemeral washes, and sensitive natural vegetation communities (Creosote Bush—White Bursage/Big Galleta Grass Association, Blue Palo Verde—Ironwood Woodland, and Desert Dunes). These effects would be mitigated to a level of less than significant through implementation of mitigation measures listed below. BIO-18 would require restoration and/or compensatory mitigation for permanent impacts to Creosote Bush—White Bursage/Big Galleta Grass Association and BIO-19 would require measures for avoidance and minimization of impacts on ephemeral washes and riparian resources as well as compensatory mitigation. Desert Dune compensatory mitigation would be provided at a minimum 3:1 ratio in conjunction with

Mojave fringe-toed lizard mitigation under BIO-28. These effects would be mitigated to a less-than-significant level through implementation of the mitigation measures described above and listed below.

### Mitigation Measures

AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-10 (Debris and Trash Disposal); BIO-14 (Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-17 (Worker Environmental Awareness Program (WEAP)); BIO-18 (Vegetation Communities Restoration and Compensation); BIO-19 (Riparian Habitat); and BIO-28 (Mojave Fringe-Toed Lizard and Desert Dunes).

### Significance after Mitigation

This impact would be less than significant after implementation of the mitigation measures listed above.

**Impact 3.3.5c: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means? (*No impact*)**

No state or federal wetlands are present within the Project site or impact areas. No impact would occur.

### Mitigation Measures

None.

### Significance after Mitigation

This impact would be less than significant after implementation of the mitigation measures listed above.

**Impact 3.3.5d: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (*Less than significant with mitigation incorporated*)**

As described previously in Section 3.3.4.1 under wildlife movement, the Project could substantially interfere with the movement of native resident and migratory wildlife and impede the use of wildlife nursery sites. Effects to terrestrial wildlife movement and migratory corridors would be mitigated to a level of less than significant through implementation of mitigation measures listed below, primarily through avoidance of riparian corridors between the solar array fields (BIO-19). Effects to traveling and migrating birds and bats are discussed above under special-status bats and special-status and migratory birds.

### Mitigation Measures

BIO-13 (Lighting); BIO-19 (Riparian Habitat); and BIO-32 (Bird and Bat Conservation Strategy).

### Significance after Mitigation

This impact be less than significant after implementation of Mitigation Measures BIO-13, BIO-19, and BIO-32.

**Impact 3.3.5e: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (*Less than significant*)**

The Project would not conflict with any local policies or ordinances protecting biological resources. Tree protection policy in the Riverside County General Plan Land Use element is specific only to mountain conifers and would not be applicable to the Project. The Multipurpose Open Space Element includes general policies related to the conservation of native plants and ecosystems but does not conflict with the Project. The Project would comply with the CDCA Plan, as amended. Refer to Appendix G for a full consistency analysis of the CDCA Plan.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.3.5f: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (*No impact*)**

There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans applicable to the Project. While the Project application was submitted prior to implementation of the DRECP, a DRECP consistency analysis is included as Appendix O.1 of the BRTR (Appendix I.1).

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

### 3.3.5.2 Alternative B: Alternative Design

Overall, Alternative B impacts under CEQA would be similar to those described under Alternative A. The levels of significance and mitigation measures determined for Alternative A would be the same under Alternative B. Alternative B would impact the same footprint as under Alternative A, but vegetation and habitat impacts would be of reduced severity. According to the Plan of Development, DE-1 is estimated to reduce long-term disturbance by 41.09 acres, instead resulting in a reduced duration of disturbance to 16 acres. DE-2 would reduce long-term disturbance from 53 acres under the Project to 0.02 acres under Alternative B. Under Alternative B, 53 acres would be subject to a reduced duration of disturbance during installation of overhead lines instead of the long-term disturbance under the Project, associated with trenching. The increased number of overhead lines and elevated infrastructure under DE-2 would result in greater potential collision and/or electrocution hazards for birds and bats; however, for the reasons described in detail in Section 3.3.5.1, the same mitigation measures would avoid or minimize these impacts such that they would be less than significant after mitigation. Alternative B may increase the potential for wildlife vehicle mortalities due to an expected increase in construction traffic; however, mitigation similarly would reduce this impact to a less-than-significant level for the same reasons described for Alternative A. During operations, DE-1 would allow for vegetation to grow under panels, being maintained to no greater than 18 inches in height. On-site vegetation communities are expected to retain some level of residual habitat value following construction, despite the ongoing effects of vegetation trimming and shading.

### 3.3.5.3 Alternative C: Reduced Acreage Alternative

Alternative C impacts under CEQA would be similar to those described under Alternative A, but reduced in scale by 420.9 acres. The levels of significance and mitigation measures determined for Alternative A would be the same under Alternative C. Under Alternative C, the Project footprint would be approximately 83 percent of the footprint under Alternative A. This would commensurately reduce impacts to vegetation communities, wildlife habitats, jurisdictional resources, and wildlife movement. Alternative C would also avoid impacts to 409 previously recorded occurrences of Harwood's eriastrum, and 169 acres of Mojave fringe-toed lizard habitat.

### 3.3.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

No impacts to biological resources would occur under Alternative D.

## 3.3.6 Cumulative Effects

This cumulative impact analysis considers the incremental effects of the Project and alternatives relative to other past, present, and reasonably foreseeable projects that could affect biological resources. The Project is located within a Development Focus Area (DFA), as designated in the DRECP. DFAs allow for concentrated areas of renewable energy development that have been sited to avoid the majority of high value habitat areas. While concentrated development would increase the number of cumulatively considerable projects within the DFA and immediate geographical area surrounding the Project; concentrated development is generally less impactful to biological resources than dispersed development because concentrated development within DFAs would allow for the preservation of greater contiguous tracts of reserve lands.

The development of multiple solar and other energy and transmission projects along the I-10 corridor has the potential to impact thousands of acres of desert lands, as shown in Table 3.1-1. Additional project types included in the cumulative analysis include recreational use, commercial development, a prison, a landfill, and an airport. Similar to the Project, most of these projects are or would be located on BLM-administered land and thus would be subject to similar minimization and avoidance measures, including applicable compensatory mitigation requirements. Regional-scale land management plans, including the DRECP and NECO, help to reduce cumulatively significant impacts on biological resources by designating management and conservation areas, including DWMAs and Wildlife Habitat Management Areas (WHMA), for special-status wildlife and their habitats. Conservation management in ACECs, DWMAs, WHMAs, Joshua Tree National Park, the Chocolate Mountains Aerial Gunnery Range, and wilderness areas provides habitat connectivity and covers 80 percent of known or predicted occurrences of special-status species and natural communities.

As described in Table 3.1-1, the cumulative scenario projects within a roughly 40-mile review area include a total of 91,544 acres of development (2.9 percent of the total area) that could impact biological resources through habitat loss. These projects include up to 30,356 acres of solar PV development, 11,560 acres of solar thermal development, 7,113 acres of other development, and 457 miles of transmission lines. A list of projects within the Cadiz Valley and Chocolate Mountains ecoregion subarea, as described in the DRECP, is summarized in Table 3.3-12 below.

**TABLE 3.3-12**
**RENEWABLE ENERGY PROJECTS IN THE**
**CADIZ VALLEY AND CHOCOLATE MOUNTAINS ECOREGION SUBAREA OF THE DRECP**

| Project Name | MW | Technology | Acreage |
|---|---|---|---|
| Blythe Solar Project | 485 | PV | 4,138 |
| Desert Harvest Solar Farm | 150 | PV | 1,208 |
| Desert Sunlight Solar Farm | 55 | PV | 4,144 |
| First Solar Electric Blythe 1 | 21 | PV | 200 |
| Genesis NextEra Phases I and 2 | 250 | Trough | 1,950 |
| McCoy Solar Energy Project | 750 | PV | 4,395 |
| Solar Reserve Rice Solar | 150 | Power tower | 1,387 |
| **Total** | **1,861** | | **17,422** |

### 3.3.6.1 Alternative A: Proposed Action

As discussed in Section 3.3.4.1, the Proposed Action would result in adverse effects on native and sensitive vegetation communities, special-status plant and wildlife species, and wildlife movement. These resources would be impacted during the construction, operation, and decommissioning phases of the Project; therefore, the temporal scope of this analysis includes all Project phases.

### Vegetation Communities

The development of the projects identified in Tables 3.3-1 and 3.3-12 would result in the long-term development of native desert communities. Based on the renewable energy projects planned or operating within the Cadiz Valley and Chocolate Mountains ecoregion subarea, the Project would contribute approximately 12 percent of cumulative impacts related to habitat acreage development within this area. The Project would contribute approximately 2.6 percent to the total acreage loss within the broader 40-mile review area. Due to the relatively low level of development in the review area, development restrictions, mitigation requirements, and management policies set forth in the DRECP and NECO, cumulative impacts on vegetation communities are expected to be less than significant.

Additionally, the following mitigation measures would reduce the Project's incremental contribution to cumulative impacts on vegetation communities: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-10 (Debris and Trash Disposal); BIO-14 (Storm Water Management Plan and Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-17 (Worker Environmental Awareness Program (WEAP)); BIO-18 (Vegetation Communities Restoration and Compensation); and BIO-19 (Riparian Habitat). Implementation of mitigation measures would avoid and minimize potentially adverse effects.

### Special-Status Plants

As noted previously, the Project would contribute to the cumulative loss and degradation habitats for special-status plants. The Project would contribute approximately 12 percent of the total cumulative impacts related to habitat acreage development within the ecoregion subarea and approximately 2.6 percent to the total acreage loss within the broader 40-mile review area. Impacts on special-status plant habitats were also reviewed based on the known occurrences within and surrounding the Project site to account for microhabitat preferences of special-status plants species that would be impacted by the Project. The projects identified in Tables 3.3-1 and 3.3-12 would not directly impact the local special-status plant populations and hundreds of recorded individuals that would be avoided by the Project. Therefore, it is expected that these local populations would persist after development of the Project and other past, past, present, and reasonably foreseeable future projects, and the cumulative impact on these local populations would be the same as that of the Project on its own (significant, but reduced to less than significant with mitigation).

The following mitigation measures would reduce the Project's incremental contribution to cumulative impacts on vegetation communities: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-10 (Debris and Trash Disposal); BIO-14 (Storm Water Management Plan and Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-18 (Vegetation Communities Restoration and Compensation); BIO-17 (Worker Environmental Awareness Program (WEAP)); and BIO-20 (Special-Status Plant Avoidance, Minimization, and Compensation). Mitigation would avoid and minimize potentially adverse effects.

### Special-Status Wildlife

Based on the renewable energy projects planned or operating within the Cadiz Valley and Chocolate Mountains ecoregion subarea, the Project would contribute approximately 12 percent of cumulative impacts related to habitat acreage development within the ecoregion subarea and approximately 2.6 percent to the total acreage loss within the broader 40-mile review area.

Non-resident special-status species include avian and bat species that reside in and migrate through desert habitats and use these habitat areas for seasonal foraging and shelter. The development of multiple energy projects in desert portions of the Pacific Flyway has the potential to increase avian collision risks, and the Project would incrementally contribute to these impacts. Avian mortalities are well documented at other southern California solar photovoltaic facilities. For example, two early design facilities, Desert Sunlight (550 MW photovoltaic) and Genesis (250 MW solar thermal) accounted for 432 avian and bat mortalities over a 5-year period, and 536 mortalities over a period of 1 year and 7 months, respectively.

Assuming that the Desert Sunlight and Genesis projects are representative of solar PV and solar thermal project impacts, respectively, then based on the estimated 4,400 MW of solar PV and 500 MW of solar thermal projects that are planned, under construction, or operational within 40 miles of the Project, the cumulative impacts on migratory bird and bat species, including special-status birds and bats, could be a loss of about 1,375 birds per year. Although this potential cumulative loss likely would include several different species, the loss of a large number of individuals from any one species could be considered significant when considered in combination with other stresses on migratory species. However, each of the existing and planned regional solar projects have been or will be subject to CEQA and/or NEPA review and each is or will be required to implement a site-specific, state-of-the-art avian collision and electrocution reduction strategy. Such an approach includes incorporating the most recent APLIC design guidelines for power lines to reduce the potential for avian collisions (APLIC 2012), implementing a Bird and Bat Conservation Strategy that provides an adaptive approach to identifying and addressing avian mortality, and incorporating the latest panel and other technological design standards to reduce avian collisions with infrastructure. With implementation of these measures to substantially avoid or reduce impacts, the cumulative impact from desert solar development on migratory birds would be reduced to less than significant. The Project's incremental contribution would be minimized through implementation of all of these measures as required by Mitigation Measure BIO-32.

The relatively low level of development in the review area, development restrictions, mitigation requirements, and management policies set forth in the DRECP and NECO, and following mitigation measures would reduce cumulative impacts to special-status species: AQ-1 (Dust Control Plan); BIO-1 (Designated Biologist); BIO-2 (Biological Monitors); BIO-3 (BRMMRP); BIO-4 (Delineation of Work Areas); BIO-5 (Staging, Stockpiling, and Materials Storage); BIO-6 (Vehicle Access and Speed Limits); BIO-7 (Equipment Parking and Storage); BIO-8 (Hazardous Spills); BIO-9 (Prevent Ponding); BIO-10 (Debris and Trash Disposal); BIO-11 (Pets and Firearms); BIO-12 (Wildlife Entrapment Avoidance); BIO-13 (Lighting); BIO-14 (Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan (DESCP)); BIO-15 (Wildfire Prevention); BIO-16 (Weed Management); BIO-18 (Vegetation Communities Restoration and Compensation); BIO-17 (Worker Environmental Awareness Program (WEAP)); BIO-20 (Special-Status Plant Avoidance, Minimization, and Compensation); BIO-21 (Desert Tortoise Authorized Biologist (AB)); BIO-22 (Desert Tortoise Exclusion Fence); BIO-23 (Desert Tortoise Pre-Construction Clearance Surveys); BIO-24 (Resource Agency Notifications); BIO-25 (Raven Monitoring, Management, and Control Plan); BIO-26 (Desert Tortoise Compensatory Mitigation); BIO-27 (Couch's Spadefoot Protection Plan); BIO-28 (Mojave Fringe-Toed Lizard and Dune); BIO-29 (Burrowing Owl Management Plan); BIO-30 (Desert Kit Fox and American Badger Management Plan); and BIO-32 (Bird and Bat Conservation Strategy).

#### *Wildlife Movement*

The cumulative review for wildlife movement considers projects within 5 miles that could impact the linkage area between the McCoy and Mule Mountains. These projects include Colorado River Substation and access road, Wiley's Well Communication Tower, Devers Palo Verde 2 Transmission Line, Ironwood State Prison, and Desert Quartzite. Based on these past, present, and reasonably foreseeable projects, the remaining width of the western portion of the linkage area would be approximately 2 miles wide between the Project and Ironwood State Prison to the west of the Project. While the development of Desert Quartzite would run across linkage corridor to the northeast, undeveloped lands would remain around the north side of the Project, allowing wildlife from the east side of the Mule mountains to pass around the Project and access the I-10 crossings to the northwest. Therefore, cumulative impacts to wildlife movement would be less than significant.

### 3.3.6.2 Alternative B: Alternative Design

Cumulative effects under Alternative B would be slightly reduced (commensurate with the reduction in Project effects) but otherwise similar to those described for Alternative A. As described above, Alternative B would not change the total Project impact footprint, but could reduce the severity of effects related to habitat loss and disturbance within the Project footprint. However, Alternative B could also increase avian collision hazards due to additional aboveground infrastructure and wildlife vehicle collision hazards due to increased vehicle traffic and the presence of residual habitat that could attract more wildlife to the Project site. Despite Alternative B's slight reduction in impacts, it would still contribute to cumulatively significant impacts to a comparable degree as Alternative A. Overall, under Alternative B the contribution to the cumulative impacts would be the same as identified for Alternative A above.

### 3.3.6.3 Alternative C: Reduced Acreage Alternative

Cumulative effects under Alternative C would be slightly reduced (commensurate with the reduction in Project effects) but otherwise similar to those described for Alternatives A and B. As described above, Alternative B would reduce the size of the developed Project area by 420.9 acres, thereby commensurately reducing the scale of impacts to biological resources. Alternative C would also avoid impacts to 409 previously recorded occurrences of Harwood's eriastrum, 169 acres of Mojave fringe-toed lizard habitat, and 11.3 acres of ephemeral washes that also play a role in the sand transport cycle and maintaining dune habitat in local SMZs. While Alternative C would reduce the Project's contribution to cumulative impacts, overall, the determined cumulative significance under Alterative C would be the same as those under Alternatives A and B.

### 3.3.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, the Project would not be implemented and no cumulative impacts would occur.

## 3.3.7 Residual Effects

Alternatives A, B, and C would result in residual habitat loss impacts on desert tortoise, Mojave fringe-toed lizard, and other special-status species that may occur on-site. These alternatives would also result in the residual loss of special-status plant habitat and individuals including Harwood's eriastrum, desert unicorn plant, ribbed cryptantha, and Utah vine milkweed. As discussed in the sections above, the recommended avoidance and minimization measures as well as compensatory mitigation would effectively offset direct, indirect, and cumulative impacts to wildlife resources and ensure compliance with state and federal laws.

# 3.4 Greenhouse Gas Emissions

## 3.4.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning greenhouse gas (GHG) emissions. The regulations applicable to this analysis are summarized in Appendix E. Analysis is based on the lead agencies' independent review and verification of the Greenhouse Gas Emissions Technical Report (AECOM 2019) in Appendix J.1.

## 3.4.2 Regional and Local Environmental Setting

GHG emissions have an adverse effect on the environment because such emissions contribute to global climate change, which affects sea-level rise (coastal flooding), changes in rainfall and snowfall (changes in water supply and runoff); changes to temperatures and habitats (biological and agricultural resources); and many other environmental systems. Because of the nature of environmental consequences from GHGs on global climate change, NEPA and CEQA require that lead agencies evaluate the cumulative impacts of GHGs on a global basis. Therefore, as described in more detail in the analytical methodology, this analysis of the Project's individual emissions addresses its contribution to cumulative impacts from global GHGs.

Traditional sources of electricity, e.g., fossil fuel-fired power plants, generate GHG emissions of primarily carbon dioxide ($CO_2$), with smaller amounts of nitrous oxide ($N_2O$), and methane ($CH_4$) primarily from unburned natural gas. In addition, sulfur hexafluoride ($SF_6$), which is used as a gaseous dielectric medium for high-voltage circuit breakers and switchgear, can leak from electrical equipment. GHGs trap heat at different rates. Because $CO_2$ is the most common GHG, the impacts of other GHGs are quantified and reported as $CO_2$ equivalents ($CO_2e$). No industrial, residential, or other emitters of GHGs are currently located or operating at the Project site. The desert ecosystem on-site, made up of plants and soils (including biological soil crusts), provides ongoing natural carbon uptake (GHG reduction) as an ecosystem service.

## 3.4.3 Analytical Methodology

The analysis of potential climate change-related impacts of the Project and alternatives is based on technical information associated with GHG emissions estimates that would be generated during the construction, operation, maintenance, and decommissioning phases, as well as qualitative analysis related to the potential impacts that climate change may have on the Project and alternatives.

**NEPA Screening Thresholds.** The Project NEPA analysis is based on the Mandatory Greenhouse Gas Reporting Rule emissions reporting limit of 25,000 MT $CO_2e$ per year, which, if exceeded by the Project's maximum annual construction GHG emissions or the total annual GHG emissions (i.e., the annual operational emissions plus the amortized construction emissions), would have a substantial adverse effect on the environment.

**CEQA Screening Thresholds.** California Department of Fish and Wildlife (CDFW) has not adopted a screening threshold for GHG emissions. The 2018 revised Riverside County Climate Action Plan (CAP) included a threshold upper limit l of 3,000 metric tons (MT) of $CO_2e$ per year to identify residential and commercial projects that must use screening tables or a project-specific technical analysis to quantify and mitigate Project emissions. As explained in the County CAP, the 2018 revised screening tables (Appendix F) are not recommended for evaluation of industrial processes projects (e.g., fossil fuel electric generating stations, heavy manufacturing) (County of Riverside 2018a). The Mojave Desert Air Quality Management District (MDAQMD) has adopted a GHG threshold of 100,000 tons of $CO_2e$ per year for direct and indirect project emissions (MDAQMD 2016). To be conservative, this analysis compares Project emissions to the County threshold of 3,000 MT $CO_2e$ per year. Due to the global nature of the environmental consequences from GHGs on climate change, the County's threshold applies to all Project-related emissions, including those that would be generated outside of the County. Because the County threshold was designed relative to project operational emissions and not project construction emissions, the Project CEQA analysis conservatively compares the total annual amortized GHG emissions (amortized construction and decommissioning emissions over the 30-year life of the Project plus annual operational emissions) to the County threshold of 3,000 MT $CO_2e$ per year. Projects that exceed this threshold account for approximately 90 percent of identified projects that need to implement feasible mitigation measures to meet their CEQA obligations. These projects account for approximately 90 percent of GHG emissions anticipated to occur by 2020 (County of Riverside 2015).

The significance threshold was developed to focus on state emissions reduction goals for 2020, and that the County, MDAQMD staff, and California Air Resources Board (CARB) have not yet provided guidance or recommendations for significance thresholds to evaluate consistency with emissions reduction goals for years beyond 2020. In the absence of significance thresholds specifically designed to focus on operational emissions reductions beyond 2020 and construction emissions, CDFW, as the CEQA Lead Agency, has determined that the sum of the Project's annual operation-related GHG emissions and the Project's amortized construction-related GHG emissions over its useful life should be compared to the County's operation-related GHG screening threshold of 3,000 MT $CO_2e$ to determine significance.

**Evaluating Impacts Related to Climate Action Plans.** The Riverside County CAP provides a list of specific actions that will reduce GHG emissions. Therefore, for this analysis, the applicable GHG reduction plans to evaluate and compare to the Project are the Senate Bill (SB) 32 CARB Scoping Plan and the County CAP. If the Project is consistent with the goals and strategies of these plans, it would not be considered to conflict with the plans' purpose of reducing GHG emissions.

## 3.4.3.1 Emissions Methodology

### *Construction and Decommissioning Emissions*

Project construction- and decommissioning-related emissions were estimated for construction worker commutes, haul truck trips (including water trucks), and the use of off-road equipment using emission factors from the U.S. Environmental Protection Agency's (USEPA's) Emission Factors for GHG Inventories (2018), The Climate Registry's (TCR) 2018 Default Emission Factors (2018), and CARB's OFFROAD and EMFAC2014 inventory models (CARB 2019). Construction and decommissioning emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying daily and total equipment usage (i.e., hours per day and number of days) by the OFFROAD equipment- and horsepower (hp)-specific emission factors. GHG emissions from on-road motor vehicles were estimated using vehicle trips, vehicle miles traveled, and EMFAC2014 mobile source emission factors. Construction and decommissioning of the Project would each require the use of up to 1,000 acre-feet of water for dust suppression and other purposes. Therefore, the GHG emissions estimates include construction- and decommissioning-related indirect short-term electricity-usage-related GHG emissions associated with proposed water use using emission and use factors established by the California Energy Commission (CEC), USEPA, and CARB (CEC 2006; USEPA 2012; CARB et al. 2010).

Assumptions used in calculating exhaust emissions from construction of the Project are included in the Greenhouse Gas Emissions Technical Report (AECOM 2019), with the exception of updated Project truck trip emissions (see Air Quality Section 3.2.3.1) and revisions to correct estimated $CO_2e$ emissions from off-road equipment by the authors of the Final EIS and Proposed PA (ESA 2019). Construction emissions that would be associated with Alternatives B and C were estimated by making equipment assumption adjustments to the Project estimates based on the components of the alternatives that would be different than the Project (ESA 2019). Refer to Appendices J.1 and J.2 for Alternatives B and C GHG emission estimates.

### *Operational Emissions*

Operational GHG emissions associated with commuting worker and water truck trips were estimated using emission factors from the EMFAC2014 inventory models. The Project would be designed with a comprehensive Supervisory Control and Data Acquisition (SCADA) system to allow remote monitoring of facility operation and/or remote control of critical components. The maximum number of staff on-site at any time would be 50 (40 temporary staff and 10 permanent staff). Water for operations would be obtained from several potential sources, including on-site or off-site groundwater wells, or trucked from an off-site water purveyor. During operations and maintenance, up to 22 acre-feet (7.3 million gallons) of water would be required annually for panel washing and maintenance and for substation restroom facilities. The indirect electricity usage-related GHG emissions associated with proposed water use during operations were estimated using emission and use factors established by the CEC, USEPA, and CARB (CEC 2006; USEPA 2012; CARB, et. al. 2010). In addition, $SF_6$ that would leak from Project electrical switchgear has been estimated to be 6.72 pounds per year (AECOM 2019).

### 3.4.3.2 GHG Emissions Impact Analysis

Independent of NEPA, but pursuant to 40 CFR Part 98 (the Mandatory Reporting of Greenhouse Gases Rule), USEPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of $CO_2e$ emissions per year (USEPA 2013). Consistent with this requirement, this analysis compares the estimated GHG emissions for the Project and alternatives to the federal GHG mandatory emissions reporting threshold of 25,000 MT per year to determine whether the GHG emissions could contribute substantially to global climate change.

With regard to the CEQA review, the CEQA significance determination for the Project GHG emissions is based on a comparison of the estimated direct and indirect annual operational GHG emissions of the Project or alternatives combined with the Project's amortized construction-related GHG emissions over its useful life to Riverside County's annual screening threshold of 3,000 MT $CO_2e$ to determine whether the GHG emissions generated by the Project or any of the alternatives would significantly contribute to global climate change.

Because the potential effects of GHG emissions are inherently a global cumulative effect, this analysis of Project-specific emissions satisfies the requirement under both NEPA and CEQA that agencies analyze the cumulative effects of a proposed action. Therefore, a separate cumulative effects analysis is not required.

### 3.4.3.3 Climate Change Impact on the Project

Climate change is expected to result in a suite of additional potential changes that could affect the natural environment in a manner that is relevant to the Project. The potential effect of climate change on the Project is discussed qualitatively.

## 3.4.4 Direct and Indirect Effects

### 3.4.4.1 Alternative A: Proposed Action

#### *GHG Emissions*

#### Construction, Operation and Decommissioning

Construction- and decommissioning-related GHG exhaust emissions would be generated by heavy-duty diesel off-road equipment; trucks used to transport fuel, water, and deliver materials and equipment to and from the Project site; and construction worker commutes. Indirect emissions associated with proposed water use during construction would also be generated.

Project construction would generate an estimated total of 21,827 MT $CO_2e$. When amortized over the 30-year life of the Project, this equates to 728 MT $CO_2e$ per year. GHG emissions from decommissioning would be similar to the emissions estimated for construction. Therefore, the total amortized emissions from Project construction and decommissioning is 1,456 MT $CO_2e$ per year. These values do not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Therefore, under NEPA, Project construction would not result, either directly or indirectly, in a substantial adverse effect related to GHG emissions.

With regard to Project operation, the analysis assumed that solar modules would be washed four times each year using light utility vehicles with tow-behind water trailers, and that the annual use of 22 acre-feet of water would result in indirect GHG emissions. Mobile source emissions were also estimated based on maintenance-related vehicle trips.

The annual operational emissions would be 171 MT $CO_2$e. Therefore, the annual operational emissions plus the amortized construction and decommissioning emissions of 1,456 MT $CO_2$e per year represent the total annual amortized Project GHG emissions of 1,627 MT $CO_2$e. This amount would also not exceed the NEPA threshold of 25,000 MT $CO_2$e per year. In addition, the amount of possible carbon savings that would be derived from implementation of the Project, as opposed to implementation of a carbon-based power plant, is estimated at up to 355,836 MT $CO_2$e per year. Therefore, under NEPA, operation of the Project would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

### *Climate Change Effects on the Project*

In addition to global warming, climate change is expected to result in a suite of additional potential changes that could affect the natural environment, including water resource availability and impacts on biological resources. Climate change is anticipated to affect the frequency and intensity of extreme weather events, including causing large storm events and more severe droughts in western watersheds. The Project site and its vicinity could experience an increase in the intensity of high rainfall and flood events, which could result in greater stormwater runoff and flash flooding, and an increase in soil erosion on-site and sedimentation on-site and downstream from the site. Implementation of a stormwater management plan would minimize or avoid the degradation of the Project from increased runoff, especially during major storm events.

The Project site and immediate vicinity contain only ephemeral drainages and washes, and surface waters occur only during substantial precipitation events as surface runoff. No perennial streams or other perennial waterways exist on-site. The Project would not rely on surface water for water supply during construction or operation, but would instead rely on groundwater for water supply during both construction and operation. Climate change is expected to result in some degree of reduced precipitation, and periods of drought could increase, resulting in an overall reduction in the availability of groundwater in the Project area. With reduced precipitation within the Project area and its vicinity, some degree of associated reduction in groundwater recharge from rainfall could occur. The Project water demand would not change; therefore, Project-related groundwater extractions could come to represent a greater portion of total available groundwater than under currently foreseeable conditions.

## 3.4.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.4-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of Alternative A. Table 3.4-1 summarizes the change in GHG emissions and climate change effects under Alternative B, by Design Element.

**TABLE 3.4-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| GHG emissions | Minor reduction | Minor reduction | Minor reduction |
| Climate Change Effects on Alternative B | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *GHG Emissions*

#### Construction, Operation, and Decommissioning

Alternative B would include the incorporation of Design Elements that would minimize grading, trenching, and vegetation removal during construction. For discussion of how Alternative B construction equipment GHG emissions were estimated, refer to the Alternative B: Alternative Design Direct and Indirect Impact discussion in Air Resources Section 3.2.4.2.

The total $CO_2e$ emissions estimated for Alternative B's construction period is 21,610 MT $CO_2e$. When amortized over the 30-year life of the Project, this equates to 720 MT $CO_2e$ per year (rounded). GHG emissions during decommissioning would be similar to the emissions estimated for construction. Therefore, the total amortized emissions from construction and decommissioning of Alternative B is 1,441 MT $CO_2e$ per year. These values do not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Under NEPA, construction of Alternative B would not result, either directly or indirectly, in a substantial adverse effect related to GHG emissions.

The annual operational emissions associated with Alternative B would be the same as Alternative A, 171 MT $CO_2e$, because Alternative B would require the same number of full-time employees and the same solar facility maintenance. Therefore, the annual operational emissions plus the amortized construction and decommissioning emissions of 1,441 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 1,612 MT $CO_2e$ that would be generated by Alternative B. This amount would also not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Therefore, under NEPA, operation of Alternative B would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

### *Climate Change Effects on Alternative B*

Climate change effects on Alternative B would be substantially the same as those discussed for Alternative A.

## 3.4.4.3 Alternative C: Reduced Acreage Alternative

### *GHG Emissions*

#### Construction, Operation, and Decommissioning

Alternative C would be similar to Alternative A, but would reduce the Project footprint by 460 acres as compared to Alternative A; however, there would still be enough land area to generate 350 MW, the same amount as Alternative A. Alternative C would require less earthwork and material movement. This alternative would consist of two units: Unit 1, a solar facility; and Unit 2, an Energy Storage System. The two units could operate independently of each other and may be constructed in different time periods. This analysis focuses first on the consolidated alternative, including development of both Units 1 and 2, and then based on the assumption that either Unit 1 or Unit 2 would be developed, but not both. The total construction-related $CO_2e$ emissions of consolidated Alternative C were estimated at 19,208 MT $CO_2e$. When amortized over the 30-year life of the Project, this equates to 640 MT $CO_2e$ per year (rounded). GHG emissions during decommissioning would be similar to the emissions estimated for construction. Therefore, the total amortized emissions from construction and decommissioning of the consolidated Alternative C is 1,281 MT $CO_2e$ per year. These values do not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Under NEPA, construction of the Alternative C would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions. Since emissions associated with each of the Alternative C units would be less than the emissions associated with consolidated Alternative C, development of Units 1 or 2 would also not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

The annual operational emissions associated with Alternative C would be the same as the Project because Alternative C would require the same amount of full-time labor and solar facility maintenance, corresponding to 171 MT $CO_2e$. Therefore, the annual operational emissions plus the amortized construction and decommissioning emissions of 1,281 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 1,452 MT $CO_2e$ that would be generated by Alternative C. This amount would not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Therefore, under NEPA, operation of Alternative C would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

### *Climate Change Effects on Alternative C*

Climate change effects on Alternative C would be substantially the same as those discussed for the Project.

### 3.4.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

If Alternative D were selected, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would result in no new GHG emissions. However, the benefits of displacing electricity generated from fossil fuel combustion would not be realized, and the long-term adverse impact associated with annual GHG emissions compared to the Project would continue.

## 3.4.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact related to GHG emissions if it would:

a) Generate GHG gas emissions, either directly or indirectly, that may have a significant impact on the environment.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

### 3.4.5.1 Alternative A: Proposed Action

**Impact 3.4.5a: Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

The Project's annual operational emissions of 171 MT $CO_2e$ plus the amortized construction and decommissioning emissions of 1,456 MT $CO_2e$ per year represent a total annual amortized GHG emissions of 1,627 MT $CO_2e$. This amount would not exceed the CEQA significance threshold of 3,000 MT $CO_2e$ per year. Therefore, Project GHG emissions would result in a less-than-significant impact.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.4.5b: Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs? (*Less than significant*)**

Measures in the CARB Scoping Plan update would indirectly address GHG emissions from construction activities, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. Project construction would include activities to reduce landfill waste, such as waste sorting on-site, transporting recyclable materials to a designated recycling facility, and selling, recycling, or composting wooden construction waste. Therefore, the Project's construction and operation would not conflict with the CARB Scoping Plan update.

Although Project construction and operation would result in GHG emissions, the Project is aligned with the goals of Assembly Bill (AB) 32 and SB 32. Consistent with SB 100, the Project purpose is to generate renewable energy to assist the State of California in achieving its 60 percent Renewable Portfolio Standard (RPS) goal by 2030 and assist California utilities in meeting their obligations under the CPUC's Energy Storage and Framework Design Program, including the procurement target of 1,325 MW by 2020, by providing a storage capacity of up to 350 MW for a period of approximately 4 hours (i.e., 1,400 megawatt-hours [MWh]).

As described in the County's CAP and Air Quality Element of the General Plan, renewable energy sources can significantly reduce GHG emissions. Thus, the Project is consistent with the goals of the County CAP and General Plan. Although the measures in the CAP do not directly relate to the Project, the goals of the Project would be consistent with the goals of the General Plan and the CAP to increase the use of alternative energy sources to reduce the amount of GHG by facilitating development and siting of renewable energy facilities and transmission lines in appropriate locations.

The Project would generate up to 350 MW of clean electricity; thus avoiding the GHG emissions associated with generation of the same power from a nonrenewable energy source. To demonstrate that the Project is aligned with and supporting the goals of SB 32, the Scoping Plan, and the RPS, the amount of possible carbon savings that would be derived from implementation of the Project, as opposed to implementation of a carbon-based power plant, was estimated at up to 355,836 MT $CO_2e$ per year.

After accounting for annual operational emissions and amortized construction and decommissioning emissions of 1,627 MT $CO_2e$ per year, the Project would result in a net carbon savings of 354,209 MT $CO_2e$ per year. As these emissions reductions are accounted for by a utility that would be using them to meet its RPS goal, the reductions are not factored into the significance findings for this analysis; however, quantifying them does demonstrate that the Project would assist the State in meeting its RPS goal. Therefore, the intent, purpose, and functions of the Project are consistent with the goals of SB 32, the AB 32 Scoping Plan, and County General Plan and CAP to protect against the detrimental effects of climate change. Therefore, impacts related to conflict with any applicable plan, policy, or regulation for reducing GHG emissions would not occur.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

## 3.4.5.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

The annual operational emissions of Alternative B would be the same as the Project, 171 MT $CO_2e$. Therefore, the annual operational emissions plus the amortized construction and decommissioning emissions of 1,441 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 1,612 MT $CO_2e$ that would be generated by Alternative B. These emissions would not exceed the County's recommended significance threshold of 3,000 MT $CO_2e$/year. Therefore, GHG emissions from Alternative B would result in a less-than-significant impact.

## 3.4.5.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

The annual operational emissions of Alternative C would be the same as the Project, 171 MT $CO_2e$. Therefore, the annual operational emissions plus the amortized construction and decommissioning emissions of 1,281 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 1,452 MT $CO_2e$ that would be generated by consolidated Alternative C. These emissions would not exceed the County's recommended significance threshold of 3,000 MT $CO_2e$/year. Therefore, GHG emissions from Alternative C would result in a less-than-significant impact. Since emissions associated with each of the Alternative C units would be less than the emissions associated with consolidated Alternative C, development of Units 1 or 2 would also result in a less-than-significant impact.

## 3.4.5.4 Alternative D: No Plan Amendment/No Action/No Project

The No Plan Amendment/No Action/No Project Alternative would not result in GHG emissions-related impacts from construction, operation and maintenance, or decommissioning because these activities would not occur and the existing environmental setting would be maintained. Because Alternative D would cause no impact related to any of the CEQA criteria considered above, the No Plan Amendment/No Action/No Project Alternative would not cause or contribute to any cumulative effect related to GHG emissions.

# 3.4.6 Cumulative Effects

The analysis of GHG emissions is inherently a cumulative impact analysis. As described above, Project construction and operation would not generate GHG emissions that would cause a significant impact on the environment. Therefore, for the reasons described in this section, the Project would not result in a considerable incremental contribution to a significant cumulative impact.

## 3.4.6.1 Alternative A: Proposed Action

### *Construction, Operation, and Decommissioning*

The direct GHG emissions associated with construction, operation, and decommissioning of Alternative A would contribute to cumulative climate change effects on resources not just within the Project area, but globally. Alternative A would generate approximately 1,627 MT $CO_2e$ per year, which would not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Virtually all of the cumulative projects would also contribute to global GHG concentrations due to the generation of short-term and/or long-term GHG emissions associated with their construction, operation, and decommissioning, if applicable. Utility-scale renewable energy development contributes relatively minor GHG emissions, generally from emissions from heavy equipment used during the construction phase, and from vehicular emissions. However, utility-scale renewable energy production also reduces $CO_2e$ emissions from utilities by offsetting emissions from new or existing fossil fuel energy sources. Since GHG emissions are aggregated across the global atmosphere and cumulatively contribute to climate change, it is not possible to determine the specific impact on global climate change from GHG emissions associated with Alternative A or with the other cumulative projects. However, the overall cumulative effect is considered significant, and the thresholds adopted to analyze project-level impacts are based on a need to determine the severity of project-specific contributions to global atmospheric carbon concentrations. Therefore, because Alternative A would not exceed applicable project-level thresholds, its incremental contribution is not considered significant.

The reduction in overall GHG emissions associated with the displacement of fossil fuel power production as a result of the Project would contribute, beneficially, to a reduction in global climate change impacts throughout the world. The renewable energy projects included among the cumulative projects would similarly result in long-term decreases in GHG emissions by displacing electricity from fossil fuel-fired power plants.

Because an objective of the Project is to comply with Federal and state policies intended to reduce GHG emissions, the Project would not contribute to cumulative conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

## 3.4.6.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

The cumulative impact statements and CEQA significance determinations identified for the Project are also applicable to Alternative B, because, as described above and for purposes of potential climate change impacts, the Project and this alternative are substantially similar.

## 3.4.6.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

The cumulative impact statements and CEQA significance determinations identified for the Project are also applicable to Alternative C, including if only Unit 1 or Unit 2 is developed, because, as described above and for purposes of potential climate change impacts, the Project and this alternative are substantially similar.

## 3.4.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project Alternative would not result in GHG emissions-related impacts. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, the Project would not result in a considerable incremental contribution to a significant cumulative impact.

## 3.4.7 Residual Effects

No mitigation measures are recommended. Therefore, the residual impacts related to climate change would be as described above.

# 3.5 Cultural Resources

## 3.5.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, and analysis of direct and indirect effects, cumulative effects, and residual effects concerning cultural resources. The regulations applicable to this analysis are summarized in Appendix E. This section does not present CEQA-specific terms, methods, or analysis of impacts of cultural resources or tribal cultural resources. CDFW continues to address these issues under CEQA and will finalize cultural resources and tribal cultural resources analyses under separate cover in a Final EIR.

A cultural resource is a location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include both archaeological and historic architectural resources, and may include 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. They may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups. The cultural resources that are evaluated in this section fall under one of the following resource types: prehistoric archaeological resource, ethnohistoric resources, and historic-period archaeological and built environment resources. These categories are explained in more detail below.

Prehistoric archaeological resources are associated with human occupation and use prior to sustained European contact. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American presence. In California, the prehistoric period began over 12,000 years ago and extended through the eighteenth century until 1769, when the first Europeans permanently settled in California.

Ethnohistoric resources typically refer to objects or places that represent the heritage of a particular ethnic or cultural group, such as Native Americans; African, European, Latino, or Asian immigrants; or enslaved or formerly enslaved people and their descendants. They may include traditional resource-collecting areas, ceremonial sites, cemeteries, shrines, or ethnic neighborhoods and structures.

Historic-period resources are resources, both archaeological and built environment (i.e., structures, buildings, or other built features), that were used or created during the historic period, when written documentation is usually available. In the Project area, historic-period resources typically, though not exclusively, are associated with Euro-American exploration and settlement of an area and mark the beginning of a written historical record. They may include archaeological deposits, sites, structures, traveled ways, artifacts, or other evidence of human activity.

Under federal historic preservation law, cultural resources must be at least 50 years old to have sufficient historic significance to merit consideration of eligibility for listing in the National Register of Historic Places (National Register). A resource less than 50 years of age must be of exceptional historic significance to be considered for listing. Groupings of resources may also be recognized as districts.

Cultural resources are categorized as buildings, sites, structures, objects, and districts for the purposes of complying with federal law, including the National Environmental Policy Act (NEPA) and the National Historic Preservation Act of 1966 (NHPA) Section 106.

Because NEPA and NHPA Section 106 each use slightly different terminology to refer to historically significant cultural resources, the following definitions of common terms used to discuss the regulatory requirements and treatment of cultural resources are provided (for definitions of other terms used in this section, please refer to Appendix C, *Glossary*):

**Cultural resource:** Under NEPA, this term covers a wider range of resources than "historic properties" and includes sacred sites, archaeological sites not eligible for the National Register, and archaeological collections.

**Historic property:** This term is used for the purposes of NEPA and NHPA Section 106, and is defined in 36 CFR Part 800, the implementing regulations for Section 106, as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register, including artifacts, records, and material remains related to such a property. The term includes properties of cultural or religious significance to Indian tribes that also meet the National Register criteria for listing found at 36 CFR Part 60.4.

## 3.5.2 Regional and Local Environmental Setting

The following background sections are derived from numerous archaeological, historical, and ethnographic studies that have been conducted in the region, as cited within the text. These sections focus on the periods and types of resources represented within the Project area. A more detailed discussion of the regional and local setting is available in the BLM Class III cultural resources survey prepared for the Project (Kidwell et al. 2018).

The regulations implementing Section 106 of the NHPA define the Area of Potential Effects (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. For purposes of this discussion, the Project area for NEPA generally is equivalent to the direct effects APE under the NHPA, which is the area within which resources could be physically affected by damage, destruction, or other alteration. In addition, a separate indirect effects APE was defined to assess potential visual, auditory, or atmosphere effects. This APE covers a broader area. Given the low-lying topography to the north, west, and northeast, the indirect effects APE extends up to 5 miles from the Project site. It is important to note that recent guidance provided by the Advisory Council on Historic Preservation (ACHP) (2019) clarifies the meaning of the terms ‘direct’ and ‘indirect’ effects in Section 106 of the NHPA. The clarified terminology differs from the current usage, but the current usage is maintained because previous version of this document, as well as supporting technical reports, use the terms direct and indirect as discussed above.

### 3.5.2.1 Prehistoric Setting

#### *Paleoindian Period (San Dieguito) (12,000 to 7,000 before present [BP])*

The Paleoindian period experienced profound environmental changes, as the cool, moist conditions of the Pleistocene (from 2.5 million to 12,000 years ago) gave way to the warmer, drier climate of the Holocene (from 12,000 years ago to present). The earliest record of habitation in eastern Riverside County occurred during the Paleoindian period. Settlement patterns of this period suggest that habitation occurred along prehistoric lakeshores and on mesas near springs and washes. Within the larger Riverside County region, Paleoindian sites may be found on stable landforms, in protected caves above floodplains and valley/riparian environments, and along ridge systems and in mountain passes that may have served as prehistoric travel routes.

The Paleoindian inhabitants were nomadic large-game hunters whose tool assemblage included choppers; percussion-flaked scrapers and knives; large, well-made, fluted, leaf-shaped, or stemmed projectile points; crescents; heavy core/cobble tools; hammerstones; bifacial cores; and scraper planes (Rogers 1939, 1966; Warren 1968). The subsistence strategy used during the San Dieguito period focused primarily on hunting both large and small game as well as gathering plants. Near the end of this period, the climate began to warm, which caused the lakes and marshes to dry, resulting in the need for different subsistence and settlement strategies (Moratto 1984).

#### *Archaic Period (Pinto and Amargosa) (7,000 to 1,500 BP)*

The climatic patterns of the late Paleoindian period continued into the early Archaic period. The beginning of the late Archaic coincides with a period of decreased moisture in the region. Research suggests the California desert environment was unstable during these periods, forcing the hunter-gatherers toward more hospitable regions (Crabtree 1981; Schaefer 1994). However, late Archaic sites have been recorded in more southern portions of Riverside County’s low desert near the Peninsular Ranges, where water was more available.

Late Archaic site types include residential bases with large, diverse artifact assemblages, abundant faunal remains, and cultural features; temporary bases; temporary camps; and task-specific activity areas. Diagnostic projectile points of this period include more refined notched (Elko), concave base (Humboldt), and small-stemmed (Gypsum) forms (Warren 1984). The mortar and pestle were used to process acorns, an important storable resource. Haliotis and Olivella shell beads and ornaments and split-twig animal figurines indicate that interior California occupants were in contact with populations on the California coast and in the southern Great Basin.

### *Late Prehistoric (Patayan Complex) (1,500 to 150 BP)*

A period of persistent drought began around 1,500 years ago, and conditions became significantly warmer and drier. The dry period continued until 750 years ago (Jones et al. 1999; Kennett and Kennett 2000).

In the Southern California desert regions, cultural development was heavily influenced by the Patayan culture of the lower Colorado River area (Warren 1984). This period includes a pre-ceramic transitional phase ranging between 1,500 and 1,200 years BP. The Patayan complex is distinguished from the transitional phase by the introduction of pottery using the paddle-and-anvil technique as well as the use of bow-and-arrow technology. Also noted is the use of floodplain agriculture (Rogers 1945). These technological advancements are believed to be from Mexico or the ancestral Pueblo cultures of the Southwest deserts (McGuire and Schiffer 1982; Rogers 1945; Schroeder 1979). Diagnostic artifacts include Saratoga Springs projectile points, small triangular projectile points, mortars and pestles, steatite ornaments and containers, perforated stones, circular shell fishhooks, numerous and varied bone tools, and bone and shell ornaments (Schaefer 1994). Elaborate mortuary customs and extensive trade networks are also characteristic of this period. Additionally, abundant amounts of obsidian were being imported into the region from the Obsidian Butte source that had been exposed by the desiccation of Lake Cahuilla (Warren 1984).

By the late Prehistoric period, there appears to have been a transition to more mobile patterns of travel and trade between the Colorado River and Lake Cahuilla (Schaeffer and Laylander 2007). Long-range travel for resource procurement and trade resulted in a system of trails through the Colorado Desert. The increased mobility along the trail system allowed the opportunity for interaction between neighboring tribes. As the Spanish began to explore the area, native trails and trade routes were used and expanded.

Trails were also used for trade routes. Trade between Southern California and the Southwest may have begun more than 9,000 years ago (Schaeffer and Laylander 2007), but the predominant trading activity ranged between AD 900 and AD 1300. Exchange items included California marine shell and Southwestern pottery. Trails are also a significant element in the Native American sacred landscape; they link the spiritual world to the natural landscape. Trails have been marked with rock shrines and artifacts such as pottery drops and flaked stone scatters, particularly white quartz. Songs and stories contain named places such as mountains, water sources, valleys, and other geographical locations along known trails (Fowler 2009).

## 3.5.2.2 Ethnographic Setting

The Colorado Desert area of Riverside County is within the ethnographic boundaries of several different eighteenth and nineteenth century Native American groups.

### *Colorado River Peoples: Quechan, Halchidhoma, and Mojave*

The first Europeans to encounter and document the traditional inhabitants of the Lower Colorado River area were the Spanish, followed by American explorers. Spanish missionary influence did not reach the desert cultures, which enabled them to retain much of their language, religion, and cultural practices.

The lower Colorado River region, including the Project area, was inhabited by numerous tribes at the time of the first Spanish contact. Alarcon and Diaz were the first non-native individuals to travel up the Colorado River in 1540; their description of the interaction between tribes indicates shifting boundaries and inter-tribal hostilities (Forbes 1965). A later expedition by Oñate in 1605 documents several tribes, including the Halchidhoma, the Quechan, and the Mojave, at various points along the river. By 1774, the Anza Expedition noted the Halchidhoma living between the Mojave and Quechan territories near Parker, Arizona. Historical accounts describe constant conflict among the tribes, with the Quechan and Mojave against the Halchidhoma. Ultimately, the Halchidhoma left the area and resettled in the mid-1800s in the Gila River area.

Settlement was determined primarily by proximity to permanent water sources. Villages and campsites were most often in the foothills and less frequently in the open areas of the desert floor and mesas, depending on the availability of water. Tribal boundaries and territories were dynamic as a result of interactions and warfare between tribes (Dobyns et al. 1963; Kroeber 1925).

Like some of the other river Yuman tribes, the Mojave focused on agriculture, producing close to half of their dietary needs from crops, including maize, squash, melons, beans, and a variety of grasses (Bee 1983; Castetter and Bell 1951). Similarly, the Quechan also relied on agriculture as well as fish from the Colorado River. In addition, both small game and large game were hunted, adding important dietary protein.

The Colorado River tribes share similar beliefs that are strongly linked to dreaming and ritual songs that apply to daily life and personal knowledge. These beliefs are based on real places that are visited physically or in dreams (Kroeber 1925). Forbes noted that religion, cultural identity, various aspects of daily life, and the landscape on which the tribes lived were intricately intertwined. Important ceremonial locations include intaglios, petroglyphs, and cleared circles along the Colorado River and in the surrounding hills. As previously mentioned, one key component of the cultural landscape is the regional trail system (Forbes 1965).

### *Chemehuevi*

The Chemehuevi Tribe is the southernmost group of the Southern Paiutes (Kelly and Fowler 1986). Their territory included the western side of the Colorado River into the Palo Verde Mountains and north toward Cadiz Dry Lake. They share many cultural elements with the Mojave, including habitation structures, ground stone tool types, and spiritual beliefs. The Chemehuevi were organized in small mobile groups who traveled widely, interacting with neighboring tribes. They subsisted on small game, hunting as far west as San Bernardino, and on harvesting seasonal plant resources throughout the region. They hunted with the Quechan in Arizona and the Serrano in Tehachapi, and were reported to have collected abalone in the Santa Barbara Channel and to have journeyed east to the Hopi villages (Kelly and Fowler 1986). They were not known to have used pottery but rather chose basketry and other woven implements, often decorated. Those who settled along the Colorado River lived in relatively permanent structures and used agriculture to a greater extent than related groups to the west, growing a variety of crops, including vegetables, beans, winter wheat, and grasses (Laird 1976).

Chemehuevi spiritual beliefs include a sacred landscape that incorporates both the spirit world and the natural world. These rituals include songs and dreams that are the basis of their daily lives, linking their beliefs, material existence, and the cultural landscape. Kroeber states that knowledge is acquired by each man according to his dreams (Kroeber 1925). The “Salt Song” describes a ceremonial trail that traverses through three states and explains the significance of the mountains and the medicines found in them.

### *Cahuilla*

The Cahuilla are one of several groups that migrated into California from the Great Basin; although the specific time, duration, and process is unclear, it is estimated to have taken place around 1,500 BP (Kroeber 1925; Laylander 1985). The Cahuilla’s traditional territory encompassed diverse topography ranging from 273 feet below sea level at the Salton Sink to 11,000 feet above mean sea level in the San Bernardino Mountains. The Cahuilla’s territory extended from the summit of the San Bernardino Mountains in the north to the Chocolate Mountains and Borrego Springs in the south. Its eastern border included the Colorado Desert west of Orocopia Mountain, and its western border included the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain (Bean 1978).

Cahuilla villages usually were in canyons or along alluvial fans near adequate sources of water and food plants. The immediate village territory was owned in common by a lineage group or band. The other lands were divided into tracts owned by clans, families, or individuals. Trails used for hunting, trading, and social interaction connected the villages. Each village was near numerous sacred sites (places of importance such as locations of traditional ceremonies or activities) that included rock art panels (Bean and Shipek 1978).

Cahuilla belief system and oral tradition indicate that when Lake Cahuilla dried up, the desert floor was settled; 17 or more rancherias have been identified in Coachella Valley. These rancheria locations are associated with hand-dug wells, springs, or palm oases. Water collection and conveyance features and associated agricultural fields have been documented from the early 1800s (Schaeffer and Laylander 2007).

### 3.5.2.3 Historic-Period Setting

European presence in the Colorado River region began with explorations in the sixteenth century. Permanent settlement occurred in the mid-nineteenth century as a result of the development of transportation and water conveyance. Exploration was primarily for travel routes in search of interior waterways and from Mexico north toward Monterey for the establishment of the California missions by the Spanish. The end of the Mexican War of 1846 to 1848, the discovery of gold in California in 1849, and the establishment of California as a state on September 9, 1850, all contributed to a steady influx of non-Hispanic settlers into the area. Later, mining, agriculture, and military training brought settlement to the Riverside County area.

#### *Transportation*

Prior to the European presence in the Colorado Desert area, transportation was limited to foot trails used by the Native Americans. As the Spanish began to explore the area, these native trails and trade routes were further used and expanded. One of the more important routes, known as the Bradshaw Trail, was developed as the result of the search for gold in the region, specifically in the area of La Paz, along the eastern side of the Colorado River (Brunzell 2008; Johnston 1980) and north of the Project area.

The Bradshaw Trail passed through the San Gorgonio Pass through Palm Springs, then turned south and ran through Martinez to the north side of the Salton Sink and between the Orocopia and Chocolate Mountains ranges. The route then skirted the southern edge of the Chuckwalla range and crossed through the Mule Mountains, located immediately southeast of the Project site, and reached the Palo Verde Valley (Brunzell 2008; Johnston 1980).

Also paramount to the development of the Colorado Desert was the arrival of the Southern Pacific Rail Road (SPRR), a transcontinental railroad system. Numerous communities sprang up along the route and greatly accommodated the mining boom in the local area (Shumway et al. 1980). The railroad was instrumental in settlement of the Colorado Desert areas by providing access to immigrants as well as shipping consumer goods and produce between the east and west coasts (Fickewirth 1992). The SPRR reached Yuma, Arizona, in 1877, and links north on the river were provided by commercial river boat traffic (Shumway et al. 1980). Later, to facilitate the mining activities in the Blythe area, a spur was constructed to the Atchison, Topeka, and Santa Fe Blythe-Ripley Line in 1916.

#### *Mining*

With the signing of the Treaty of Guadalupe Hidalgo in 1848, the southwest came under the control of the United States. The Colorado Desert was the scene of prolonged mining from 1850, with the beginning of the gold rush in California.

Mining and prospecting were primarily focused in the mountains and high desert north of Blythe, and small-scale mining occurred from the 1860s until after the Great Depression in the 1930s (Morton 1977). Although gold was found only in small amounts, mining of gypsum and manganese were more successful ventures. To the north in the McCoy Mountains, several significant manganese mines provided ore for armaments during both World Wars I and II. Other minerals that were mined from the areas in the Project vicinity include fluorite, copper, and uranium (Warren et al. 1981).

#### *Homesteading and Agriculture*

The passage of the Homestead Act in 1862 and the Desert Land Act in 1877 were instrumental in the settlement of the Lower Colorado River area. The Homestead Act offered the opportunity for United States citizens to file a claim on 160 acres or less of land for $1.25 per acre (Homestead Act of 1862). The Desert Land Act amended the Homestead Act and was enacted to encourage and promote economic development of the desert lands of the western states. This act offered up to 640 acres of land at $1.25 an acre and required a promise to irrigate the land within three years (Desert Land Act of 1877).

Agriculture in the Palo Verde Valley was made possible by the construction of canals and pipelines as well as the securing of water appropriations. Thomas Blythe came to the lower Colorado River area and established water rights along the Colorado River. His efforts in irrigation and cultivation of the land were successful. The first irrigation project was not completed until 1883, after his death (Warren et al. 1981), but eventually 40,000 acres were irrigated as a result of his diverting water from the Colorado River (Blythe Chamber of Commerce 2011). The valley was still subject to flooding, however, until after the completion of Boulder Dam in the 1930s.

#### *World War II Desert Training Center/California-Arizona Maneuver Area*

Soon after the United States entered World War II, General George S. Patton, Jr., was assigned the task of developing a training center to prepare U.S. Army troops for combat against German forces in North Africa. General Patton identified an area in the California desert that offered realistic terrain and combat conditions to train the troops. The lack of water, extreme heat, and difficult terrain as well as the remote location would assist preparing troops for mobilization and combat tactics. Ultimately, training missions were both on the ground and in the air; all manner of equipment and battle strategies were tested and perfected there (Bischoff 2000).

General Patton established base operations headquarters at Camp Young, near Indio, and began training troops in April 1942. The Desert Training Center (DTC) facility extended from Desert Center in California to the Colorado River, as far north as Searchlight, Nevada, and as far south as Yuma, Arizona. To accommodate the massive number of troops brought to the region, the Army took over several desert airfields in 1942, including the one that was to become Blythe Army Air Base (BAAB), located 7 miles northeast of the Project site.

The Desert Training Center and the California-Arizona Maneuver Area (DTC/C-AMA) consisted of 11 major camps, 7 in California and 4 in Arizona. The larger camps included Camp Iron Mountain, Camp Granite, and Camp Coxcomb, north of Desert Center. All of the facilities were connected by railroads and major roads (Shumway et al. 1980). In April 1944, the facilities began evacuations and closing, eventually being turned back to the U.S. Department of the Interior and private landowners (Bischoff 2000).

Several of the camps, training sites, and maneuver areas associated with the DTC/C-AMA are relatively near the APE. Blythe Army Air Field is northeast of the Project area. Camp Coxcomb is to the northwest, and Camp Young is to the west near Chiriaco Summit and the George S. Patton Museum. In addition, the Desert Center Army Airfield is located to the northwest of the APE at Camp Desert Center, and Camp Granite and Camp Iron Mountain are farther north. The Government Pass training site is in the Chuckwalla Mountains to the west, and the Palen Pass Maneuver Area is north of the APE. However, training maneuvers occurred throughout the DTC/C-AMA and not just in association with these established facilities. Traces of the activities that took place within the DTC/C-AMA are present within the Project site, and include tank tracks, fox-holes and emplacements, and rock barricades, as well as a variety of artifacts like c-rations, communication wire, spent ammunition, and other refuse.

### 3.5.2.4 Identified Cultural Resources

This subsection provides the results of cultural resource studies conducted by Applied Earthworks and Earle and Associates. These studies include a BLM Class I existing information inventory (performed by Applied Earthworks), an ethnographic/ethnohistoric literature review (Earle 2017), and a BLM Class III field survey inventory (Kidwell et al. 2018; see Appendix K.1); Addendum 2 to the BLM Class III inventory which covered a 15-acre APE modification (Price 2018; see Appendix K.2); an assessment of potential indirect (visual, auditory, and atmospheric effects) on historic properties within the indirect effects APE (Hanes 2019; see Appendix K.3); and an extended phase 1 evaluation and phase 2 subsurface archaeological testing and evaluation study (McDougall et al. 2019; see Appendix K.4). Applied Earthworks also prepared a supplemental assessment of potential effects following project design modifications, as well as an augmented indirect effects analysis (Hanes 2020; see Appendix K.5).

### EIC Records Search

The EIC records search initially covered the APE plus a 1-mile radius. At the request of the BLM, the records search area was expanded by an additional mile to the southeast from the base of the Mule Mountains to encompass the Mule Mountains Area of Critical Environmental Concern (ACEC). This records search area (Project Study Area) thus included 30 square miles and extended beyond the physical boundary and view shed of the Project site in some areas. The records search included a review of previously recorded cultural resources within the search area, as well as a review of numerous previous studies conducted within the APE. The records search indicates that nine previous studies have occurred within the direct APE, concentrated in the northern portion of the APE, and approximately 14 percent (407 acres) have been surveyed. The records search also indicated that 67 cultural resources have been previously documented within the APE, including 45 archaeological sites and 22 isolates. Of the 45 archaeological sites, 17 are prehistoric archaeological sites, 16 are historic-period archaeological sites, and 6 are multicomponent archaeological sites with materials associated with both periods. The 22 isolated finds include 16 prehistoric, 5 historic-period, and 1 prehistoric and historic-period.

### Field Inventory Investigations

Between July 24 and November 21, 2017, Applied Earthworks conducted a Class III field survey with support from Aspen Environmental covering a total of 3,485 acres and encompassing the 3,090-acre direct effects APE (Kidwell et al. 2018). Tribal participants from the Colorado River Indian Tribes (CRIT) and the Agua Caliente Band of Cahuilla Indians were also present during the surveys. On December 14, 2018, a supplemental survey of 15 acres of an APE modification for a new gen-tie alignment was also surveyed, as reported in Addendum 2 to the BLM Class III inventory report (Price 2018). Tribal participants from the CRIT were present during the supplemental survey.

The BLM Class III Inventory consisted of systematic pedestrian survey designed to identify cultural resources to the extent possible on the basis of surface observations. Survey transects were spaced at no more than 20 meters (approximately 66 feet) apart. As part of the survey, cultural resources identified as part of the EIC records search were revisited to assess their current condition and update documentation as necessary. All newly identified cultural resources were recorded on California Department of Park and Recreation (DPR) 523 site forms. Resource locations were mapped using a handheld GPS unit capable of sub-meter accuracy. Selected attributes of prehistoric archaeological sites including artifact classes, raw material types, artifact morphology, and count were documented. For historic-period archaeological sites, information pertaining to artifact class, functional group, diagnostic information (product names, manufacturer, or maker’s marks), and count data were collected. Isolated finds were defined as a cultural resource with fewer than three artifacts within a 5-meter by 5-meter square (25 square meters) area. Ceramic concentrations consisting of sherds from the same apparent object were also recorded as isolates. No cultural materials were collected during the survey and no subsurface testing was conducted. Three previously recorded archaeological sites (CA-RIV-343 [trail segment], -504 [petroglyphs], and -673 [trail segment]) outside of the direct APE were also revisited to verify the site boundaries and update their DPR records.

As a result of the survey, 122 newly discovered archaeological sites and 161 newly discovered isolates were identified within the direct effects APE. These include 62 prehistoric archaeological sites, 40 historic-period archaeological sites, and 20 multicomponent archaeological sites. All of the isolated finds are from the prehistoric period. In addition to newly discovered resources, the survey relocated all but one of the 45 previously documented archaeological sites, and 11 of the 22 previously documented isolated finds. As a result of both the records search and field survey, a total of 167 archaeological sites (82 prehistoric, 58 historic-period, and 27 multicomponent) and 183 isolated finds have been documented within the direct effects APE.

### Archaeological Site Testing

In August 2019, subsurface testing was conducted at six prehistoric sites (CA-RIV-10023, CA-RIV-10027/H, CA-RIV-10963, CA-RIV-12744, CA-RIV-12765, and CA-RIV-12794) within the direct effects APE for Alternative C (Reduced Acreage Alternative) (McDougall et al. 2019). The purpose of the excavation was to evaluate the sites for their eligibility for listing in the National Register, as part of BLM’s effort to identify historic properties and assess the potential for adverse effects under Section 106 of the NHPA. These are sites that were recommended eligible for listing in the National Register in Applied Earthworks' Class III Inventory for the BLM (Kidwell et al. 2018). CA-RIV-10023 consists of a thermal feature and lithic scatter. The prehistoric component of CA-RIV-10027/H also consists of a thermal feature and lithic scatter; the historic-period component consists of a refuse scatter. CA-RIV-10963 and CA-RIV-12744 consist of scatters of ceramics and lithics. CA-RIV-12765 is a ceramic scatter. CA-RIV-12794 contains thermal features. Further surface examination and recordation was conducted at three additional prehistoric sites (CA-RIV-12684, CA-RIV-12725, and CA-RIV-12754) also within the direct effects APE for Alternative C (McDougall et al. 2019). These sites are described as complex ceramic scatters and/or lithic scatters and were recommended not eligible for the National Register by Applied Earthworks (Kidwell et al. 2018). Testing ended up occurring at two of the three sites (CA-RIV-12684 and CA-RIV-12725) to verify the potential for intact buried deposits and/or other indicators. All of the sites selected for testing and/or further surface examination are within the APE for all action alternatives. Based on a lack of scientific data potential or other qualities that would indicate significance, none of the sites was determined eligible for listing in the National Register.

### *National Register of Historic Places Eligibility Determinations*

The BLM prepared eligibility determinations individually for prehistoric and historic-period archaeological components, meaning the prehistoric components of multicomponent sites were evaluated separately from the historic period components. The data presented here reflect these component-based evaluations. Isolated finds, which lack archaeological association and research value, generally are not recommended eligible for listing in the National Register. The following discussion, therefore, pertains to archaeological sites only and does not consider further the 183 isolated artifacts, which BLM has determined to be not eligible. SHPO has concurred with the BLM's eligibility determinations.

Within the direct APE there are 58 historic-period archaeological sites and 27 historic-period components of multicomponent sites. One of these resources is classified as a temporary historical camp. The resource lacks association with a particular event and lacks diversity in artifact types. As such, it was determined to be ineligible for listing in the National Register. Fifty-nine resources are classified as refuse scatters and dumps. Similarly, given their lack of association with known events and their lack of distinctive features, these also were determined to be ineligible for listing in the National Register. Twenty-one resources are characterized as military emplacements, likely associated with the DTC. However, these features in themselves are not prominent enough to convey the significance of the DTC operations, nor are they associated with a specific person. As such, they were determined to be ineligible for listing in the National Register. One resource is classified as a vehicle track. While the resource may relate to the DTC, it is not possible to associate it with a particular activity, and it too was determined to be ineligible for listing in the National Register. One resource consists of a historical period rock stack, termed a cairn. Lacking in association, it was determined to be ineligible for listing in the National Register. Ten resources consist of land surveying objects, including survey markers, monuments, benchmarks, and cairns. None have unique qualities and so none was determined to be eligible for listing in the National Register.

Within the APE there are 82 prehistoric archaeological sites and 27 prehistoric components of multicomponent sites. Of these, 81 are classified as lithic scatters, 4 are classified as ceramic scatters, 10 are classified as complex artifact scatters, 2 consist of cleared circles and rock rings, and 7 are classified as thermal features consisting of fire-affected rock. Based on the field studies discussed above and consultation with Indian tribes and other consulting parties, the BLM has determined that the prehistoric component of one site, CA-RIV-1819/H, is eligible for listing in the National Register under Criterion D. The BLM further will treat an additional 16 prehistoric sites or prehistoric site components as eligible for the National Register under Criterion D for the purposes of the Project: CA-RIV-10033/H, CA-RIV-11650, CA-RIV-12731, CA-RIV-12750, CA-RIV-12758/H, CA-RIV-12759, CA-RIV-12784, CA-RIV-12786, CA-RIV-12787, CA-RIV-12793, CA-RIV-12796, CA-RIV-12803, CA-RIV-12807, CA-RIV-12808, CA-RIV-12822, and CA-RIV-12831. While not formally determined eligible, these 16 resources will be treated as historic properties eligible for listing under Criteria D of the National Register for purposes of the Project. These sites may contain subsurface deposits or surface remains with dateable or temporally diagnostic materials. If present, such materials could provide important new information regarding regional cultural chronology, land use, and settlement systems, and the sites would thus be eligible for listing in the National Register under Criterion D.

As a result of BLM's identification efforts under Section 106 of the NHPA, a total of 17 sites are being treated as historic properties under Criterion D of the National Register. The remaining 150 archaeological sites and all 183 isolates have been determined not eligible for listing in the National Register. As described in Chapter 4, the BLM submitted these determinations to all consulting parties, and the SHPO concurred with the BLM's determinations with respect to eligibility for listing in the National Register, pursuant to the NHPA Section 106 regulations at 36 CFR 800.4(c).

### *Resources within the Indirect Effects APE*

In addition to resources within the direct effects APE, several resources of concern were identified within the indirect (visual, auditory, and atmospheric) effects APE (Hanes 2019, 2020). These resources include three historic properties with heightened tribal sensitivity and values that could be affected by the proposed undertaking: the Mule Tank Petroglyph Site (CA-RIV-504), the Mule Canyon Intaglio Site (CA-RIV-773), and archaeological site CA-RIV-1821/H. The first two of these (CA-RIV-504 and -773) are currently listed in the National Register under Criteria C and D individually and as contributors to the Mule Tank Discontiguous Rock Art District. The BLM determined in 2019 (related to the Desert Quartzite Solar Project) that the prehistoric component of CA-RIV-1821/H is eligible for listing in the NRHP under Criteria C and D.

The BLM also assessed the potential for adverse visual effects on two historic-era transmission lines (33-011110 and 33-012532) and eight prehistoric archaeological sites containing trail segments within the indirect APE (Hanes 2020). The two transmission lines have been previously determined by the BLM as eligible under Criterion A due to their association with historical events related to electrical-power generation and transmission. The prehistoric archaeological sites containing trails include CA-RIV-53, -343, -504, -650, -673, -772, -3803, and -12028. As noted above, CA-RIV-504 (the Mule Tank Petroglyph Site) is listed in the National Register under Criteria C and D. In August 2019 the BLM made the determination, in consultation with SHPO, that the remaining seven sites are eligible for listing under Criterion C because each site embodies the distinctive characteristics of a type, period, or method of construction. These eight sites contain trail segments that are generally oriented in an east-to-west direction through the Project vicinity.

### *Sensitivity for Buried Archaeological Resources*

The BLM Class III inventory (Kidwell et al. 2018) provides a review of relevant geo-archaeological investigations. Additional analysis is provided by Jill Onken (2019). According to her work, the sensitivity of the Project area for buried prehistoric archaeological resources is difficult to predict in the absence of more intensive study for several reasons, as discussed below. The Project area is located on the lower portion of the piedmont flanking the northern front of the Mule Mountains and overlooking the Chuckwalla Valley. Inspection of USGS topographic maps and satellite imagery of the area indicates that the Project is situated on distal alluvial fan deposits that are locally mantled by eolian dunes or sheets.

As is often the case for the desert areas of southeastern California, neither soil maps nor detailed geological surficial mapping are available for the Project area. The best available geological map (Stone 2006) is small-scale (1:100000) and does not include detailed mapping of surficial alluvium. This map depicts most of the Project as Holocene alluvium, suggesting that much of the area may have moderate or high sensitivity.

Although soils in the Project area have not been mapped, NRCS mapping is available for the area to the immediate east, including most of the footprint of the Desert Quartzite Solar project. Windingstad (2016) interpreted the predominant soil series there (Aco, Orita, and Rositas series) as indicative of possible moderate to high sensitivity for buried sites. Because no soils data are available for the Project area, preliminary evaluation of buried site sensitivity is dependent almost wholly on interpretation of satellite imagery.

In the upper and middle portions of Colorado Desert piedmonts, Holocene and Pleistocene alluvial fan surfaces are relatively easy to differentiate on satellite imagery, based on the degree of pavement formation and erosion evident (Bull 1991). The Project, however, is situated on the lower piedmont, where distinguishing early Holocene from late Pleistocene alluvial surfaces is more ambiguous.

**TABLE 3.5-1**
**NATIONAL REGISTER -ELIGIBLE RESOURCES WITHIN THE PROJECT AREA**

| Primary | Trinomial | Temporary No. | Description | Alternative | National Register Eligibility |
|---|---|---|---|---|---|
| 33-001819[1] | CA-RIV-1819/H | AE-3372-464/H | Ceramic and lithic scatter; military training local, historical refuse scatter | A and B | Prehistoric component eligible Criterion D; historical component not eligible |
| 33-019719[1] | CA-RIV-10033/H | AE-DEV-46 | Thermal feature; lithic scatter; historical refuse scatter | A and B | Prehistoric component treated eligible Criterion D; historical component not eligible |
| 33-023732 | CA-RIV-11650 | — | Ceramic scatter | A and B | Treated eligible Criterion D |
| 33-028260 | CA-RIV-012731 | AE-3372-039 | Ceramic and lithic scatter | A and B | Treated eligible Criterion D |
| 33-028285 | CA-RIV-012750 | AE-3372-141 | Ceramic and lithic scatter with fossilized bone; prehistoric trail segment | A and B | Treated eligible Criterion D |
| 33-028293[1] | CA-RIV-12758/H | AE-3372-154/H | Ceramic scatter; historical refuse scatter | A and B | Prehistoric component treated eligible Criterion D; historical component not eligible |
| 33-028294 | CA-RIV-012759 | AE-3372-155 | Ceramic scatter with sparse flaked and ground stone; fire-affected rock | A and B | Treated eligible Criterion D |
| 33-028366 | CA-RIV-012784 | AE-3372-199 | Flaked and ground stone lithic scatter | A and B | Treated eligible Criterion D |
| 33-028368 | CA-RIV-012786 | AE-3372-230 | Ceramic and lithic scatter | A and B | Treated eligible Criterion D |
| 33-028369 | CA-RIV-012787 | AE-3372-231 | Thermal features, lithic scatter | A and B | Treated eligible Criterion D |
| 33-028375 | CA-RIV-012793 | AE-3372-240 | Thermal features | A and B | Treated eligible Criterion D |
| 33-028378 | CA-RIV-012796 | AE-3372-248 | Thermal features | A and B | Treated eligible Criterion D |
| 33-028385 | CA-RIV-012803 | AE-3372-256 | Thermal features; ceramic scatter | A and B | Treated eligible Criterion D |
| 33-028390 | CA-RIV-012807 | AE-3372-263 | Thermal features; ceramic and ground stone scatter | A and B | Treated eligible Criterion D |
| 33-028391 | CA-RIV-012808 | AE-3372-266 | Ceramic scatter with effigy vessel sherds | A and B | Treated eligible Criterion D |
| 33-028478 | CA-RIV-012822 | AE-3372-292 | Cleared circles; lithic scatter | A and B | Treated eligible Criterion D |
| 33-028487 | CA-RIV-012831 | AE-3372-324 | Cleared circle; lithic scatter | A and B | Treated eligible Criterion D |

NOTES:
1 Sites with both prehistoric and historical components, and several historical sites, are comprised of two site classes. Each class was evaluated for eligibility.

Geomorphological field investigations of the Project APE were conducted concurrently with archaeological test excavations in August 2019 and included detailed geomorphic mapping and field inspection of a representative sample of the geomorphic surfaces tentatively identified on satellite imagery. Preliminary results indicate that roughly 10 percent of the Project APE appears to consist of relict Pleistocene landforms with well-developed desert pavements. These landforms are composed of alluvium likely deposited prior to human occupation of the area and therefore probably have very low sensitivity for buried archaeological resources. Approximately 20 percent of the Project APE is covered by latest Pleistocene to late Holocene gravel-rich fan alluvium that was probably deposited between 12,000 and 2,000 years ago. Although these deposits are likely young enough to contain prehistoric archaeological material, they represent high-energy depositional environments where site preservation is improbable. As a result, these areas probably have low sensitivity for intact, buried prehistoric sites. Surficial deposits in the remainder of the project area are dominated by lower energy fan deposits and eolian deposits of probable latest Holocene age (<2,000 years). This suggests that about 70 percent of the Project APE could have moderate or high potential to contain intact buried sites. That said, future subsurface exploration and consideration of the natural and cultural context of these areas could justify a lower sensitivity classification if the Holocene deposits are found to be thin or if areas lack proximity to resources such as water and toolstone. This information and the results of any future geoarchaeological investigations of the Project area will be used to inform the plan for archaeological monitoring and post-review discoveries to be developed and implemented if the Project was to advance to construction.

## 3.5.3 Analytical Methodology

Evaluation of potential impacts of the Project and alternatives on cultural resources is based in part on review of legal responsibilities established under NEPA (42 USC Sections 4321, 4331-4335), the NHPA, and other relevant authorities. To carry out NEPA, the Federal Government has a "continuing responsibility…to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may…preserve important historic, cultural, and natural aspects of our national heritage…." (42 USC Section 4331(b)(4)). NEPA requires the federal agency to take a "hard look" at the impacts on cultural resources associated with a Project and alternatives. The analysis takes into account direct, indirect, and cumulative impacts.

For purposes of NEPA, this Final EIS and Proposed PA includes information gathered as part of the NHPA Section 106 process about the potential effects on historic properties from the proposed undertaking, i.e., the BLM's decision whether or not to issue the requested right-of-way grant and approve a California Desert Conservation Area (CDCA) Plan Amendment. Each step of the Section 106 process requires consultation with the State Historic Preservation Officer, federally recognized Indian tribes, local governments, other identified consulting parties, and the public.

## 3.5.4 Direct and Indirect Effects

The following analyses address construction, operation, and decommissioning.

### 3.5.4.1 Alternative A: Proposed Action

Project-related ground-disturbing construction activities could directly affect both known cultural resources and those discovered during construction by damaging and displacing artifacts. Such construction activities could diminish the integrity of historic properties and alter the characteristics that make the properties eligible for the National Register. In addition, effects on post-review discoveries of historic properties (i.e., National Register-eligible buried archaeological resources discovered during construction) and unanticipated effects on identified historic properties could occur.

A total of 167 sites (82 prehistoric, 58 historic-period, and 27 multicomponent) and 183 isolates (177 prehistoric, 5 historic-period, and 1 multicomponent), have been identified within the direct effects APE and could be directly affected by the Project. The three most common types of prehistoric sites within the APE include: (1) lithic and/or ceramic scatters, (2) fire-affected rock concentrations, thermal features, or hearths, and (3) cleared circles. The most prevalent historic-period sites within the APE are: (1) refuse scatters/can dumps, (2) military emplacements, and (3) military vehicle tracks. Of the sites that contain both prehistoric and historic-period components, most contain scatters of prehistoric lithics/ceramics and historical refuse.

The BLM has determined that the prehistoric component of one site, CA-RIV-1819/H, is eligible for listing in the National Register under Criterion D, and will treat an additional 16 prehistoric sites or prehistoric site components as eligible for the National Register under Criterion D for the purposes of the undertaking: CA-RIV-10033/H, CA-RIV-11650, CA-RIV-12731, CA-RIV-12750, CA-RIV-12758/H, CA-RIV-12759, CA-RIV-12784, CA-RIV-12786, CA-RIV-12787, CA-RIV-12793, CA-RIV-12796, CA-RIV-12803, CA-RIV-12807, CA-RIV-12808, CA-RIV-12822, and CA-RIV-12831. These 17 resources are treated as eligible historic properties under Criterion D for purposes of the Project. The remaining 150 archaeological sites and all 183 isolates within the direct effects APE have been determined to be ineligible for listing in the National Register. All of these sites and isolates could be directly affected. Finally, the Project could also adversely affect buried and currently unknown archaeological resources with Natural Register-eligible characteristics.

Direct Project-related impacts on any of the 17 historic properties could constitute an adverse effect, and while avoidance of direct impacts is the preferred measure for resolving adverse effects on National Register-eligible or -listed properties, based on the proposed Project design, it may not be feasible to completely avoid adverse effects on historic properties. Mitigation Measure CUL-1 requires the preparation and execution of a NHPA Section 106 Memorandum of Agreement (MOA) to resolve adverse effects to historic properties and a Historic

Properties Treatment Plan as part of the MOA process to resolve adverse effects to historic properties, should adverse effects be identified. Mitigation Measure CUL-2 requires the preparation of a Long Term Management Plan. Mitigation Measure CUL-3 provides for the development of a NAGPRA Plan of Action for addressing the post-review discovery of human remains during Project implementation. Mitigation Measures CUL-4, CUL-5, and CUL-6 provide procedures for unanticipated effects to identified historic properties as well as procedures for post-review discoveries, including but not limited to National Register evaluation and determining whether avoidance is feasible or whether mitigation through data recovery or other method is necessary. Mitigation Measure CUL-7 pertains to worker training.

Most impacts are expected to occur during construction, since operation, maintenance, and decommissioning activities would generally be confined to the same areas impacted by construction. However, operation and decommissioning impacts are possible, particularly to unknown resources (i.e., post-review discoveries), or through inadvertent and unanticipated damage to known resources. Mitigation Measures CUL-1 through CUL-7 apply to construction, operation, and decommissioning, ensuring that adverse effects to historic properties are avoided, minimized, and mitigated during all Project phases.

Twelve National Register-listed and eligible resources occur within the indirect effects APE and could be subject to visual impacts, noise-related impacts, or potential atmospheric effects (e.g., from increased dust) during construction: CA-RIV-504, CA-RIV-773, CA-RIV-1821/H, 33-011110, 33-012532, CA-RIV-53, CA-RIV--343, CA-RIV-650, CA-RIV-673, CA-RIV-772, CA-RIV-3803, and CA-RIV-12028. Five of these sites have a direct view of the Project site and seven do not have a direct view. The visual assessments showed that only a small portion of the Mule Tank Petroglyph Site (CA-RIV-504) has a view of the proposed Project, and that the remainder of the site is fully screened by the immediate surrounding topography, since the site is situated in a deep, narrow arroyo (Hanes 2020). Because of this, and because Criterion C integrity factors of location, materials, design, and workmanship are not susceptible to visual effects, the BLM has found that the Project will not have an adverse effect on the resource. Regarding the other two resources, the Mule Canyon Intaglio Site (CA-RIV-773) and CA-RIV-1821/H, the visual analysis showed that the proposed Project falls outside the viewsheds of the two resources, since the resources are located just below the brow of a low rise that shields them from an open view of the proposed development. Therefore, the BLM has found that the resources would not be visually affected by the Project, regardless of the alternative selected. The visual assessment also indicated that potential auditory and atmospheric (i.e., dust) effects from the Project would be transitory and, thus, the BLM found, pursuant to Section 106, that the Project would not pose an adverse effect to these historic properties. In January 2021, the SHPO concurred with this finding.

With respect to the two historic-era transmission lines (33-011110 and 33-012532), while setting is important to these structures' integrity, they do not have direct views of the proposed Project, so would not be adversely affected. Three of the eight sites that contain trail segments (CA-RIV-650, -772, and -12028) do not have direct views of the proposed Project site, and so would not be adversely affected. For the remaining five sites (CA-RIV-53, -343, -504, -673, and -3803), at least a portion of the proposed Project would be visible from the sites. In 2019, the BLM found that the integrity aspects of Criterion C, including integrity of location, design, materials, and workmanship, for these sites would not be diminished by a similar solar development project (the Desert Quartzite Solar Project), and SHPO concurred with that assessment (Hanes 2020). As a result, the BLM found that this Project would not have an adverse visual effect on the resources, regardless of the alternative selected. In January 2021, the SHPO concurred with this finding.

### 3.5.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.5-2) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.5-2 summarizes the change in adverse effects on cultural and historic resources under Alternative B, by Design Element.

**TABLE 3.5-2**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Cultural Resources | Reduction | Reduction | Reduction |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

Alternative B would occur within the same footprint as Alternative A, meaning the same 167 sites (82 prehistoric, 58 historic-period, and 27 multicomponent) and 183 isolates (177 prehistoric, 5 historic-period, and 1 multicomponent) occur within the APE. This includes all 17 resources determined or treated as eligible for the National Register under Criterion D. Alternative B would minimize grading, avoid or limit trenching, and use elevated support structures in lieu of solid cement or steel foundations. This would reduce ground disturbance and also allow more flexibility in Project development, both of which could reduce potential direct impacts on cultural resources, both known and unknown. However, the specific reduction in impacts on cultural resources is unknown and, as with Alternative A, there is a potential for direct adverse effects on historic properties. Consequently, Alternative B would require implementation of Mitigation Measures CUL-1 through CUL-7 to avoid or minimize Project-related impacts on cultural resources.

Overall, the impacts of operation and decommissioning of Alternative B would be similar but reduced relative to Alternative A because of the reduced ground disturbance impacts.

### 3.5.4.3 Alternative C: Reduced Acreage Alternative

Construction of Alternative C would result in similar types of impacts on cultural resources as described for the Project. However, because of the reduced size of Alternative C, the number of cultural resources that could be directly affected would be further reduced. In total, Alternative C could impact 95 sites (37 prehistoric, 48 historic-period, and 10 multicomponent) and 97 isolates (all prehistoric). In comparison with Alternative A, there would be potential impacts on 72 fewer archaeological sites and 86 fewer isolates. All 17 of the historic properties, that is the resources determined or treated as eligible for listing in the National Register, fall outside the project footprint of Alternative C and therefore would be avoided. The BLM found, pursuant to Section 106, that Alternative C would not directly adversely affect historic properties. In January 2021, the SHPO concurred with this finding. The potential to encounter undiscovered resources also would be reduced. Consequently, Alternative C construction impacts would be reduced relative to Alternative A and would avoid impacts to all resources determined or treated as eligible for listing in the National Register, thereby avoiding potential adverse effects to historic properties However, as with Alternative A, there is a potential to directly and adversely affect unknown historic properties. Alternative C would require implementation of Mitigation Measures CUL-2 through CUL-7 to avoid or minimize Project-related impacts on cultural resources. Mitigation Measures CUL-1 would not be required.

Overall, the impacts associated with the operation and decommissioning of Alternative C would be greatly reduced relative to Alternative A because of the reduced Project area and avoidance of significant resources.

### 3.5.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under this alternative, none of the components of the Project would be built. If Alternative D were implemented, there would be no changes to on-site conditions or the existing environmental setting as described above, and the existing environmental setting would be maintained. Under this alternative, there would be no potential for adverse effects to cultural resources.

## 3.5.5 CEQA Significance Thresholds and Determinations

This section is intentionally left blank. CDFW continues to address issues related to cultural resources and tribal cultural resources under CEQA and will finalize these analyses under separate cover in a Final EIR.

## 3.5.6 Cumulative Effects

### 3.5.6.1 Alternative A: Proposed Action

The regulations implementing Section 106 of the NHPA contemplate close coordination between the NEPA and NHPA processes, and expressly integrate consideration of cumulative concerns within the analysis of a proposed action's potential direct and indirect effects by defining "adverse effect" to include "reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (36 CFR 800.5(a)(1)). Central to this method is the understanding that cultural resources are a non-renewable resource, and damage to or destruction of significant resources is non-reversible.

The geographic area for the cumulative analysis is defined by the area within which the cultural resources are expected to be similar to those that occur on the Project site because of their proximity and because similar environments, landforms, and hydrology would result in similar land use and, thus, site types. This geographic area includes the eastern portion of the Chuckwalla Valley and Mule Mountains to the south, as well as portions of the Palo Verde Mesa close to the Project site. Relevant cumulative projects within this geographic scope include existing facilities (such as I-10, Chuckawalla Valley and Ironwood State Prisons, Blythe Energy Project transmission line, and Colorado River Substation), recently constructed solar projects (including NRG Blythe PV, Genesis, and Blythe Solar Power Generation Station), and proposed or approved projects (including Desert Quartzite Solar, Palen Solar, Palo Verde Mesa Solar, Blythe Mesa Solar, Blythe Energy Project II, and Ten West Transmission Line). All of these are listed and described in Table 3.1-1. These projects all involved or will involve grading or other excavation that has the potential to impact cultural resources. This is particularly true of the large-scale renewable energy projects, which cover large expanses of land, including BLM-managed land. These areas are known to contain archaeological resources.

An analysis of cumulative impacts takes into consideration the entirety of impacts that the Project could have on cultural resources in conjunction with any effects that could occur as a result of the past, present, and reasonably foreseeable projects considered in the cumulative scenario. For NEPA, this includes consideration of cultural resources including historic properties.

A total of 167 archaeological sites and 183 archaeological isolates have been identified within the direct effects APE; these would be subject to being damaged or destroyed by Project-related grading and excavation. As described in more detail in Section 3.5.2.4, within the direct APE there are 58 historic-period archaeological sites and 27 historic-period components of multicomponent sites. All of these historic-period sites have been determined ineligible for listing in the National Register. Of the 82 prehistoric sites and 27 prehistoric components of multicomponent sites, 66 prehistoric sites and 26 prehistoric components of multicomponent sites have been determined ineligible for the National Register. Although the cumulative loss of historic- and prehistoric-period sites within the geographic scope is greater than that attributable to this Project alone (see Table 3.5-3, below) because these ineligible historic- and prehistoric-period sites within this Project's direct effects APE do not meet any of the eligibility criteria for the National Register, their loss would not constitute an adverse cumulative impact under NEPA because these sites will not yield information important to the understanding of the region's history or prehistory (eligible for the National Register under Criterion D), they are not otherwise eligible for the National Register, and they appear to represent cultural resource types that are known to be common within the geographic scope of the cumulative effects analysis.

As described in Section 3.5.4.1, the prehistoric component of one multicomponent archaeological site has been determined to be eligible for listing in the National Register under Criterion D, and a further 16 prehistoric sites or prehistoric site components are being treated as eligible for listing under Criterion D for purposes of this undertaking. Alternative A has the potential to directly affect these prehistoric archaeological sites.

**TABLE 3.5-3**
**SUMMARY OF KNOWN NATIONAL REGISTER-ELIGIBLE PREHISTORIC AND HISTORIC RESOURCES WITHIN CUMULATIVE SCENARIO PROJECTS**

| Project (Source) | National Register-Eligible Sites Affected | Site Descriptions | Project Status |
|---|---|---|---|
| Genesis Solar Energy Project (BLM 2010) | 12 prehistoric | Rock shelters, petroglyphs, special use sites, lithic scatters, temporary camps, gathering areas, sacred areas, trails, and isolated finds | Constructed |
| | 15 historic | Road segments, wells, refuse scatters with domestic and/or military discards, tank tracks, and other isolates | |
| Desert Quartzite Solar Project (Selected Alternative) (BLM 2019) | No direct adverse effects on eligible sites | n/a | Approved |
| Palen Solar Project (BLM and Riverside County 2018) | No direct adverse effects on eligible sites | n/a | Approved |
| Palo Verde Mesa Solar | No direct adverse effects on eligible sites (11 eligible sites or sites requiring evaluation avoided) | n/a | Approved |
| Blythe Mesa Solar Project (BLM 2015) | No direct adverse effects on eligible sites | n/a | Approved |
| Ten West Link Transmission Line (Selected Alternative) (BLM 2018) | 49 known eligible sites or sites requiring evaluation<br>132 projected eligible sites or sites requiring evaluation | Prehistoric trails and intaglios | Approved |

Not all of the sites affected by the projects in the cumulative scenario are the same. Prehistoric sites can vary from one another because they date to different eras or because they are of common or less common types. 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 more common resources may cause a lesser cumulative impact than destruction of a single site of a less common resource. Accordingly, this analysis provides a qualitative cumulative effects analysis based on the specific types and combinations of prehistoric resources that may be affected.

Prehistoric sites within the geographic area of analysis include trails, intaglio and rock art sites, campsites, habitation sites, lithic and/or ceramic scatters, thermal features. Many of these sites can contribute information to the understanding of regional research themes, such as chronology, ritual activity, travel and trade, ethnicity, subsistence, prehistoric settlement and land use, and lithic technology.

The 17 prehistoric resources that are eligible or assumed eligible for listing in the National Register that would be directly affected by this Project consist of ceramic and lithic scatters, thermal features, cleared circles, flaked and ground stone, ceramic vessel sherds, and one prehistoric trail segment. These sites are characteristic of the site types within the geographic scope and, as acknowledged in the BLM's determination that these sites meet, or are being treated as meeting, the eligibility requirements for the National Register under Criterion D. They contain or may contain data that could contribute to the record of prehistory in the Chuckwalla Valley, Mule Mountains, and Palo Verde Mesa. Specifically, they could yield new information regarding regional research themes of chronology, prehistoric settlement and land use, and lithic technology (Kidwell et al. 2018). These sites may contain subsurface deposits or surface remains with dateable or temporally diagnostic materials. If present, such materials could provide important new information regarding regional cultural chronology, land use, and settlement systems. While it is not possible based on available data to quantify how many of the prehistoric resources impacted by past, present, and reasonably foreseeable projects could provide information relevant to these themes, it is likely that the cumulative loss of prehistoric resources as a result of these projects could result in a loss of important information necessary to a full understanding of regional prehistory.

Although the total number of prehistoric and historic resources located within the geographic area of analysis is unknown, the available information regarding the number of resources impacted or with the potential to be impacted by past, present, and future projects in the geographic area of analysis has been compiled and summarized in Table 3.5-3. Several projects have already been constructed (and impacts have already occurred) and several remain pending approval or construction (impacts have not yet occurred). No information was found for the NRG Blythe PV project, the Blythe Solar Power Generation Station, or the Blythe Energy Project II; however, these projects have relatively small footprints.

None of the archeological sites, once damaged or destroyed by the Proposed Action/Alternative A or other projects in the cumulative scenario, can be replaced. Potential adverse effects would include direct effects in the form of physical disturbance or alteration as a result of construction activity. The Proposed Action/Alternative A would contribute to the cumulative impact through direct effects on the 17 prehistoric resources identified in Section 3.5.4.1 as either determined or treated as eligible for the National Register under Criterion D. Under NEPA, this would be a substantial, direct, adverse contribution to the cumulative impact on the loss of prehistoric resources within the geographic scope for cultural resources. Indirect cumulative impacts from visual intrusion are not possible under any of the alternatives since the historic properties with sensitivity identified within the indirect effects APE either do not have views towards the Project and/or changes to the broader setting caused by the proposed Project are not an important to their significance and integrity.

Mitigation Measure CUL-1 requires the preparation and execution of a NHPA Section 106 Memorandum of Agreement (MOA) and Historic Properties Treatment Plan to resolve adverse effects to historic properties, should those effects be identified. Mitigation Measure CUL-2 requires inclusion of a Long-Term Management Plan. Mitigation Measure CUL-3 requires the preparation of a plan for addressing the discovery of human remains discovered during Project implementation. Mitigation Measures CUL-4, CUL-5, and CUL-6 provide procedures for unanticipated effects on identified historic properties as well as procedures for post-review discoveries, including significance evaluation and determining whether avoidance is feasible or whether mitigation through data recovery or other method is necessary. Mitigation Measure CUL-7 pertains to worker training. However, while implementation of these mitigation measures would reduce potential impacts to cultural resources generally, and resolve adverse effects under the NHPA Section 106, they may not fully prevent Project-related cumulative impacts on cultural resources. Therefore, the contribution of Alternative A to cumulative impacts on cultural resources may remain under NEPA, particularly in combination with the incremental loss of cultural resources resulting from other past, present, and future projects.

### 3.5.6.2 Alternative B: Alternative Design

Alternative B would involve less ground disturbance than the Project, and thus would generally have a lower potential to create cumulative impacts under NEPA. However, the types of impacts and specific resources affected would be the same as for Alternative A, and Alternative B would require implementation of Mitigation Measures CUL-1 through CUL-7 to avoid, minimize, or mitigate Project-related impacts on cultural resources. Also as with Alternative A, while implementation of these mitigation measures would reduce potential impacts on cultural resources generally, and resolve adverse effects under the NHPA, they may not fully prevent Project-related cumulative impacts on cultural resources, particularly given the high number of large-scale development projects in the geographic area of analysis. Therefore, the contribution of Alternative B to cumulative impacts on cultural resources as a result of the Project may remain substantial under NEPA, particularly in combination with the incremental loss of cultural resources resulting from other past, present, and future projects.

### 3.5.6.3 Alternative C: Reduced Acreage Alternative

As Alternative C would be reduced in size compared to Alternative A, it would have a corresponding reduction in the potential for impacts on cultural resources, both known resources and those identified during construction. Furthermore, Alternative C would avoid all 17 known historic properties (the prehistoric sites described above). Alternative C would substantially reduce the contribution of the project to cause cumulative impacts because the direct impact on known important resources would be eliminated. Regardless, to ensure avoidance to known historic properties, and to address potential impacts to any currently unknown resources encountered during construction, Alternative C would require implementation of Mitigation Measures CUL-2 through CUL-7 to avoid, minimize, or mitigate Project-related impacts on cultural resources. Mitigation Measures CUL-1 would not be required. The reduced size of project footprint and implementation of these mitigation measures would reduce potential impacts on cultural resources generally and would avoid adverse effects under the NHPA Section 106. Therefore, the contribution of Alternative C to cumulative direct impacts on cultural resources as a result of the Project would not be adverse under NEPA.

### 3.5.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, the Project would not be constructed and public lands in the Project area would continue to be managed by BLM in accordance with existing land use practices. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, Alternative D would not contribute to cumulative impacts on cultural resources.

## 3.5.7 Residual Effects

Implementation of Mitigation Measures CUL-1 through CUL-7 (as applicable) would reduce Project-related impacts on cultural resources under NEPA for Alternatives A and B. Additionally, impacts from Alternative B would be somewhat reduced compared to Alternative A because less ground disturbance is included under Alternative B. Impacts from Alternative C would be substantially reduced, such that known historic properties are avoided and Mitigation Measure CUL-1 would not be required. Cultural resources damaged or destroyed by construction activities, even if subjected to mitigation measures such as data recovery, would be permanently lost from the archaeological record. In addition, Native American consultations may raise issues that cannot be fully resolved through the implementation of mitigation measures. Because the Alternative C site footprint is incorporated into the Preferred Alternative and would avoid effects on known historic properties, the BLM found, pursuant to Section 106, that Alternative C would not directly adversely affect historic properties. In January 2021, the SHPO concurred with this finding. Should an alternative be selected that would adversely affect historic properties, the BLM, in consultation with the consulting parties, will develop a MOA and Historic Properties Treatment Plan (Mitigation Measure CUL-1) to resolve those adverse effects identified prior to issuing a Record of Decision (ROD) for this project.

# 3.6 Energy Conservation

## 3.6.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning energy conservation. The regulations applicable to this analysis are summarized in Appendix E.

## 3.6.2 Regional and Local Environmental Setting

Electrical services in the Project area are currently provided by Southern California Edison (SCE). In 2017, SCE recorded 85,879,000 megawatt-hours (MWh) of electricity sales (SCE 2018). In 2017, Riverside County used approximately 290 million gallons of diesel and 1.05 billion gallons of gasoline (CEC 2017).

## 3.6.3 Analytical Methodology

Consistent with the National Environmental Policy Act Section 102(2)(c)(v) and 40 CFR 1502.16, this impact analysis evaluates the potential for the Project to result in the irreversible and irretrievable commitment of resources, such as non-renewable energy resources during Project construction, operation, or decommissioning. The potential impacts are analyzed based on an evaluation of whether the construction and operational energy use by the Project would be considered excessive, wasteful, or inefficient, taking into account that the Project would provide a new source of renewable energy. The Project's electricity use during construction was estimated for a temporary construction office and for water conveyance for dust control. The electricity demand for water conveyance was estimated based on the anticipated water demand multiplied by a California Energy Commission (CEC)-provided emission factor for water-related energy use (CEC 2006). The electricity use and generation during operations was obtained directly from the Greenhouse Gas Technical Report (AECOM 2019), assuming a 350 MW solar array operating 12 hours per day for 365 days per year. Petroleum fuels would be required to construct, operate and maintain, and decommission the Project, but the precise amount needed is uncertain. For the purposes of this analysis, the gasoline and diesel consumption during construction was calculated from the greenhouse gas emission estimates for the Project (see Section 3.4, *Greenhouse Gas Emissions*, the Air Quality and Greenhouse Gas Technical Report [AECOM 2019]), and the EMFAC2014 emission factors (CARB 2014). Calculations are provided in Appendix J.1.

## 3.6.4 Direct and Indirect Effects

### 3.6.4.1 Alternative A: Proposed Action

#### *Energy Consumption*

Direct energy use would include the consumption of petroleum fuel for vehicles and the use of electricity for equipment and facilities. Indirect energy use includes the energy required to acquire, manufacture, and transport the materials and components used in construction of the Project.

##### Construction and Decommissioning

Energy expenditures related to construction and decommissioning would include both direct and indirect uses of energy in the form of fuel for construction equipment and delivery trucks (including water deliveries), gasoline used by worker trips to the Project site, and electricity for a construction trailer and for water conveyance. The solar plant site does not have, and the Project would not require, natural gas service.

Distribution-voltage electricity service would be extended to the site to support construction and later operation. Electricity would be required for construction trailers, electronics, and water conveyance for on-site dust control, and the Project would consume an annual average of 2,223 MWh of electricity during construction (ESA 2019). The Project's annual average electricity use represents 0.004 percent of SCE's total sales in 2017.

The Project would consume an estimated 1,847,723 gallons of diesel and 347,188 gallons of gasoline during the entire construction period. This equates to an annual average of approximately 962,356 gallons of diesel and 180,827 gallons of gasoline (ESA 2019). The Project's annual construction-related diesel and gasoline consumption would represent 0.33 and 0.017 percent, respectively, of total countywide consumption.

Decommissioning activities would include the use of similar equipment to construction activities; therefore, similar impacts would be expected.

Currently, no energy is consumed at the Project site. All the energy consumed by the Project during its construction and decommissioning would therefore exceed the baseline, and fuel use would represent an irreversible use of finite, fossil fuel energy resources to power on- and off-road equipment. However, that energy consumption would be short-term; it would not result in the long-term depletion of non-renewable energy resources, and it would not permanently increase reliance on non-renewable energy resources. In addition, construction equipment would be required to comply with California Air Resources Board's (CARB's) Construction Equipment Idling regulation, which imposes idling limitations for off-road vehicles. This would serve to reduce construction-related diesel fuel consumption. See *Project Summary*, below, for a comparison of energy consumption to energy production over all phases of the Project.

### Operation and Maintenance

The use of heavy-duty, off-road equipment is expected to be limited during operation and maintenance (AECOM 2019b). Solar panels would be washed up to four times a year using light utility vehicles with tow-behind water trailers to supply water to the Project site. Each year of operation, water delivery would result in the consumption of approximately 4,271 gallons of diesel (ESA 2019). Additionally, approximately 50 workers could be required on-site for site security, panel washing, or other maintenance activities. Worker trips would result in the consumption of approximately 3,643 gallons of gasoline annually (ESA 2019; AECOM 2019a).

The amount of gasoline and diesel consumed during operation would be substantially less than the amount consumed during construction, but fossil fuels would still be the primary source of energy consumed on-site. Compared to countywide annual petroleum fuel consumption, the Project's use of gasoline and diesel would represent 0.00035 percent of the County's gasoline use and 0.0015 percent of the County's diesel fuel use in 2017 (CEC 2017).

During operation and maintenance of the Project, SCE's distribution power line would provide electric utility service to the operation and maintenance building and onsite substations, switchyards, and the energy storage system, and power for water conveyance for panel cleaning and other outdoor water use. Operating the Project would consume approximately 81.1 MWh of electricity annually, sourced from SCE. The Project would generate up to 1,533,000 MWh of electricity annually and completely offset the amount of electricity used on-site, though Project-generated electricity would not be consumed on-site because no voltage step-down infrastructure to support such use is proposed. Overall, the electricity generated by renewable sources during operation would result in a beneficial effect on the electricity supply to the grid.

### Project Summary

The Project would generate up to 1,533,000 MWh of electricity annually from a renewable source over its expected 30-year service life, for a lifetime total of 45,990,000 MWh. As shown in Table 3.6-1, this production is more energy than the Project would use throughout all its phases, including construction and decommissioning, even when accounting for direct fossil fuel consumption (i.e., gasoline and diesel). When converted to MWh equivalents, the total energy consumption during construction, operation, and decommissioning would be approximately 184,000 MWh, or about 0.4 percent of the Project's total solar electricity output.

The result would be a net increase in electricity resources available to the regional grid, generated from a renewable source. The energy used during each phase of the Project would contribute to this net beneficial effect; therefore, the energy consumption associated with each phase would not be wasteful or inefficient.

**TABLE 3.6-1**
**SUMMARY OF PROJECT ENERGY CONSUMPTION**

| Energy Type | Annual Consumption | Conversion to MWh | Annual MWh or equivalent | Total MWh or equivalent |
|---|---|---|---|---|
| **Construction (2 years)** | | | | |
| Electricity | 2,223 MWh | - | 2,223 MWh | 4,446 MWh |
| Gasoline | 180,827 gallons | 0.03341 MWh/gal | 6,041 MWh eq. | 12,082 MWh eq. |
| Diesel | 962,356 gallons | 0.03795 MWh/gal | 36,521 MWh eq. | 70,121 MWh eq. |
| **Operation (30 years)** | | | | |
| Electricity | 81.1 MWh | - | 81.1 MWh | 2,433 MWh |
| Gasoline | 3,643 gallons | 0.03341 MWh/gal | 121.7 MWh eq. | 3,651 MWh eq. |
| Diesel | 4,271 gallons | 0.03795 MWh/gal | 162.1 MWh eq. | 4,863 MWh eq. |
| **Decommissioning (2 years)** | | | | |
| Electricity | 2,223 MWh | - | 2,223 MWh | 4,446 MWh |
| Gasoline | 180,827 gallons | 0.03341 MWh/gal | 6,041 MWh eq. | 12,082 MWh eq. |
| Diesel | 962,356 gallons | 0.03795 MWh/gal | 36,521 MWh eq. | 70,121 MWh eq. |
| **Total Project Consumption, all phases** | | | | **184,245 MWh eq** |

### *Reliance on Natural Gas and Oil; Reliance on Renewable Energy Sources*

The Project would rely on the use of oil through its minimal use of diesel and gasoline, described above. However, the Project would add up to 1,533,000 MWh annually to the state's supply of electricity produced from renewable sources, increasing the state's reliance on renewable energy sources.

## 3.6.4.2 Alternative B: Alternative Design

Alternative B is defined by the implementation of one or more Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.6-1) that differ from Alternative A (see Section 2.5). Alternative B would change the effects associated with the linear features of the Project. Table 3.6-2 summarizes the change in energy consumption under Alternative B, by Design Element.

**TABLE 3.6-2**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Energy Consumption | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Energy Consumption*

#### Construction, Operation, and Decommissioning

Alternative B would also construct a 350 MW solar facility. While trenching and grading would be reduced under Alternative B, approximately 1,000 poles would be constructed to suspend AC and DC cables aboveground. Alternative B would require the same number of full-time employees during operations as Alternative A. Therefore, the construction, operation, and decommissioning of Alternative B are expected to result in similar energy consumption as Alternative A. Electricity and petroleum-based fuel would be consumed to power vehicles, equipment, and, facilities during all phases of Alternative B. As with Alternative A, the energy used during each phase of Alternative B would contribute to the Project's net beneficial effect; therefore, the energy consumption associated with each phase would not be wasteful or inefficient.

#### *Reliance on Natural Gas and Oil; Reliance on Renewable Energy Sources*

**Construction, Operation, and Decommissioning**

Alternative B would consume oil through the use of diesel and gasoline as described above for Alternative A. At the same time, the Project would contribute up to 1,533,000 MWh annually to the state's supply of electricity produced from renewable sources, increasing the state's reliance on renewable energy sources.

### 3.6.4.3 Alternative C: Reduced Acreage Alternative

#### *Energy Consumption*

**Construction, Operation, and Decommissioning**

Alternative C would also construct a 350 MW solar facility. Construction of Alternative C would include all the same elements as Alternative A, but with a 460-acre reduction in the size of the Project site. As stated above, this land area reduction would require slightly less electricity and petroleum fuels for transporting water and for workers traveling across the site. Therefore, the impacts from constructing and decommissioning the Project under Alternative C would be slightly lower than from Alternatives A or B. During operations, Alternative C would require the same number of employees as Alternatives A and B, and would require the same amount of fuel and electricity during operations to power vehicles, equipment, and facilities. But because the energy used during each phase of Alternative B would contribute to producing the net beneficial effect on energy supplies, the energy consumption associated with each phase would not be wasteful or inefficient.

#### *Reliance on Natural Gas and Oil; Reliance on Renewable Energy Sources*

**Construction, Operation, and Decommissioning**

Alternative C would consume oil through the use of diesel and gasoline as described above for Alternative A. At the same time, the solar facility (Unit 1) would contribute up to 1,533,000 MWh annually to the state's supply of electricity produced from renewable sources, increasing the state's reliance on renewable energy sources. Operating the energy storage system component of Alternative C (Unit 2) would consume up to 40 MWh of electricity annually, sourced from the solar plant or from SCE. If implemented alone, Unit 2 would assist with smoothing peak and base period supplies to better meet demand, assisting with the state's increased reliance on renewable energy sources, but would not generate renewable electricity of its own.

### 3.6.4.4 Alternative D: No Plan Amendment/No Action/No Project

As described in Section 2.7, Alternative D would result in no development on the Project site. If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would not result in irreversible consumption of finite natural energy resources.

## 3.6.5 CEQA Significance Thresholds and Determinations

Appendix F of the CEQA Guidelines provides guidance for assessing energy impacts of projects. The appendix provides three goals:

- Decreasing overall per capita energy consumption
- Decreasing reliance on fossil fuels, such as coal, natural gas, and oil
- Increasing reliance on renewable energy sources

Consistent with Appendix G, a project would have a significant impact on Energy Conservation if it would:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

### 3.6.5.1 Alternative A: Proposed Action

**Impact 3.6.5a: Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

The energy requirements to construct, operate, and decommission the Project under Alternative A are described above. The energy used during each phase of the Project would be necessary to implement the Project and would contribute to a net gain in renewable electricity resources.

**Effects on Local and Regional Energy Supplies and Energy Resources, Transportation Energy Use.** As discussed above, the fuel and electricity required to construct and decommission the Project would represent a small fraction of regional energy demand. In addition, construction equipment would be required to comply with CARB's Construction Equipment Idling regulation, which imposes idling limitations for off-road vehicles. This would serve to reduce construction-related diesel fuel consumption. Because construction is temporary at any given project site, but occurs regularly throughout the region, the annual regional fuel and electricity consumption figures can be assumed to include typical construction-related demand. The fact that the Project's construction-related demand would occur at this Project site during the specified construction period does not indicate that there would be an overall increase in demand compared to prior years, because the construction projects contributing to past demand will have concluded. Therefore, there is no reason to determine that the Project would require additional capacity within regional energy supply systems, or that Project construction would affect fuel or electricity resources.

Once operational, the Project would provide 1,533,000 MWh per year of renewable energy to the regional electricity grid. Minor operational electricity consumption on-site would be entirely offset by the solar generation provided, as shown in Table 3.6-1. The Project would use gasoline and diesel fuel for worker trips to and from the site for scheduled maintenance and panel cleaning. The Project's operational use of gasoline and diesel would represent 0.00035 percent of the countywide gasoline use and 0.0015 percent of the countywide diesel fuel use in 2017 (CEC 2017). The CEC records total gasoline and diesel use in the county annually. Since the CEC started tracking fossil fuel use in 2010, the average year-to-year fluctuation in gasoline and diesel use has been 3.2 percent and 8.6 percent, respectively. Based on these year-to-year changes in fuel use, the Project's annual contribution would fall within the average fluctuation for both gasoline and diesel and therefore would not be a noticeable increase that would require additional capacity.

**Effects on Peak and Base Period Demands.** Although the Project would be a net electricity generator, solar photovoltaic systems generate electricity only during hours of the day with sufficient sunlight. The increase in solar power supplying electricity to California's grid has resulted in an increased need for resources with "ramping flexibility" and the ability to start and stop multiple times per day in order to ensure that supply and demand in the grid match at all times. According to the California Independent System Operator (CAISO), during a typical spring day, over 10,000 MW of flexible supply needs to come online within approximately 3 hours each day to replace the electricity lost by solar power as the sun sets (CAISO 2016). The Project's battery storage would provide a new source of flexible supply that would assist the CAISO in managing this evening ramp-up period to better match supply and demand by delaying the input of electricity to the grid until it is needed, after the sun has set and consumer demand spikes during evening hours (e.g., for cooking, indoor and outdoor lighting, television, and household appliances). Thus, with battery storage, the Project would have a beneficial effect on peak and base periods of demand for electricity, and would be of greater benefit in this regard than a solar plant with no storage capacity.

**Efficiency and Compliance with Energy Standards.** With regard to mobile energy use, Project construction and maintenance workers would use light-duty vehicles that are compliant with the National Energy Conservation Policy Act efficiency regulations. Construction contractors would use equipment that is compliant with federal, state, and regional requirements where applicable. Truck fleet operators would use trucks that meet or exceed the U.S Environmental Protection Agency and National Highway Traffic Safety Administration fuel efficiency standards for medium- and heavy-duty trucks.

In addition, construction equipment and trucks are required to comply with the CARB's off-road emission standards, which result in reduced fuel consumption from more fuel-efficient engines. Equipment and heavy-duty truck operators would be required to comply with idling limits of 5 minutes per location. Although these regulations were adopted for the purpose of reducing criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy sources. Additionally, although not required to reduce this impact to below a level of significance, Mitigation Measure AQ-3 includes an idling policy that would further require that for all diesel-powered off-road engines, the idling limit is reduced to 2 minutes, while maintaining the exceptions specified in Title 13 CCR Section 2449(d)(3).

Based on the above analysis, the Project would not represent a wasteful, inefficient, or unnecessary consumption of energy, and would decrease California energy consumer reliance on fossil fuels while increasing reliance on renewable energy sources compared to existing conditions. The Project's impacts under this criterion would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. None required.

**Impact 3.6.5b: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (*Less than significant*)**

### Construction, Operation, and Decommissioning

Alternative A proposes a solar facility that would produce a new renewable source of electricity. Therefore, the Project would directly support California's Renewable Portfolio Standard goal of increasing the percentage of electricity procured from renewable sources to 60 percent by 2030 and its requirement that all state's electricity must come from carbon-free resources by 2045.

The Southern California Association of Governments' Regional Comprehensive Plan is a major advisory plan that addresses regional issues, serving as an advisory document for member agencies such as the City of Blythe and the County of Riverside. The plan includes an energy chapter that identifies energy goals listed below:

- Reduce our region's consumption of non-renewable energy
- Increase the share of renewable energy in the region

Since the Project would provide a new source of renewable energy supporting state and local energy goals, would offset its fuel usage, and would comply with fuel and energy efficiency regulations as described under Impact 3.6.5a, the Project would not conflict with or obstruct an applicable state or local plan for renewable energy or energy efficiency. Therefore, this impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. None required.

### 3.6.5.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Like Alternative A, Alternative B would construct a 350 MW solar photovoltaic facility within 2,500 acres of land. However, Alternative B involves Design Elements that minimize grading and limit trenching, but Alternative B would also result in the installation of 1,000 poles needed to suspend the AC/DC cable aboveground. Therefore, it is expected that fuel usage under Alternative B would be similar to Alternative A. Alternative B would have the same number of employees as Alternative A during operations. Therefore, fuel usage during operations would be the same as Alternative A. All other impacts related to construction electricity and operational electricity would remain the same as Alternative A.

### 3.6.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C's energy impacts would result in slightly lower but comparable fossil fuel usage when compared to Alternative A. The decreased acreage would require less equipment movement on-site and less worker travel between work areas. However, like Alternative A, Alternative C would also construct a 350 MW solar facility. Therefore, it is expected that Alternative C would result in slightly reduced but comparable construction fuel use when compared with Alternative A. Alternative C would have the same number of employees as Alternative A during operations. Therefore, fuel usage during operations would be the same as Alternative A. Construction and operation electricity requirements would remain the same as Alternative A.

The solar facility (Unit 1) would contribute up to 1,533,000 MWh annually to the state's supply of electricity produced from renewable sources, but if implemented without Unit 2, would not have the same beneficial effect on peak and base energy supplies as Alternative A or the entirety of Alternative C would. Operating the energy storage system component of Alternative C (Unit 2) would consume up to 40 MWh of electricity annually, sourced from the solar plant or from SCE, and Unit 2 would assist with smoothing peak and base period supplies to better meet demand.

### 3.6.5.4 Alternative D: No Plan Amendment/No Action/No Project

#### *Construction, Operation, and Decommissioning*

As described in Section 2.7, Alternative D would result in no development on the Project site. Under Alternative D, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would not result in wasteful, inefficient, or unnecessary consumption of energy and would not conflict with existing energy plans.

## 3.6.6 Cumulative Effects

### 3.6.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The geographic scope for the analysis of cumulative impacts on electricity consumption is SCE's service area because the Project is located within the service boundaries of SCE; therefore, electricity consumed at the Project site would be provided by SCE through a distribution line, which would power the construction trailers.

The geographic scope for the cumulative analysis of fossil fuel impacts is the county of Riverside. The main contributors to the Project's fuel consumption would be fueling equipment during the construction phase and motor vehicle trips and on-site truck use by employees and temporary workers (i.e., for panel washing) during operations. Energy used during construction would primarily be in the form of gasoline and diesel fuel. Even if project construction were to occur simultaneously with other cumulative projects, the cumulative use of energy resources during construction would be consistent with normal construction practices and would comply with efficiency- and conservation-related policies intended to address cumulative energy consumption statewide. In addition, construction equipment would be required to comply with CARB's Construction Equipment Idling regulation, which imposes idling limitations to off-road vehicles. This would serve to reduce construction-related diesel fuel consumption. Therefore, no significant cumulative impact on the supply and/or availability of these fuel sources has been identified to which the Project would contribute.

Although the Project would result in a contribution to cumulative energy consumption in California, it would have a net beneficial effect on energy supply because, as shown in Table 3.6-1, total Project energy consumption would be a fraction of the over 45,990,000 MWh the Project would produce over its 30-year lifespan. Overall, the Project could not contribute to a significant cumulative impact on energy consumption in California because the Project would generate more electric power than it would use over its service life. The Project would not conflict with any renewable energy or energy efficiency plans, and so could not have a considerable contribution to a significant cumulative impact with respect to the implementation of such plans.

### 3.6.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Alternative B's energy impacts would result in slightly lower fossil fuel use than Alternative A if the Design Elements that minimize grading and limit trenching are implemented. All other impacts related to construction electricity and fuel consumption, operational electricity consumption and output, and operational fuel use would remain the same as with Alternative A. Therefore, the contributions of Alternative B to cumulative impacts would be the same as described for Alternative A, except with a reduced contribution to cumulative fossil fuel consumption during construction.

### 3.6.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C's energy impacts would result in slightly lower fossil fuel use than Alternative A. The decreased acreage would require less equipment movement on-site during construction and decommissioning, and less worker travel between work areas during all phases. All other impacts related to construction electricity and fuel consumption, operational electricity consumption and output, and operational fuel use would remain the same as with Alternative A. Therefore, the contributions of Alternative C to cumulative impacts would be the same as described for Alternative A, except with a reduced contribution to cumulative fossil fuel consumption during construction.

### 3.6.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no development would occur. As such, it would not result in any new electricity, natural gas, or fossil fuel use at the Project site, and the existing environmental setting would be maintained. Alternative D would result in no impact on energy consumption or conservation or on the reliance on renewable or non-renewable energy sources.

## 3.6.7 Residual Effects

Because no mitigation measures are recommended, residual impacts on energy conservation would be the same as discussed for the Project.

# 3.7 Geology and Soil Resources

## 3.7.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning geology and soil resources. The regulations applicable to this analysis are summarized in Appendix E. The information provided in this section is based in part on the March 2018 Desktop Geotechnical Study prepared for the Project and presented in Appendix M.1. The paleontological setting and discussion of Project-related impacts can be found in Section 3.11, *Paleontological Resources*.

## 3.7.2 Regional and Local Environmental Setting

The resource-specific study area for impacts related to geology, soils, and seismicity is defined as the Project footprint and vicinity, including all areas of temporary and/or permanent ground disturbance. The study area for faulting and seismic hazards is the broader southeastern portion of the Mojave Desert geomorphic province, because distant faults can produce ground shaking and secondary seismic hazards at the Project site.

### 3.7.2.1 Regional

The Project site is located in the southeastern portion of the Mojave Desert geomorphic province in Chuckwalla Valley. This province is a broad interior region of isolated mountain ranges separated by expanses of desert plains. It is characterized by an enclosed drainage system and many playas (desert basins with no outlet to the ocean). Two important fault trends control topography: a prominent northwest-southeast trend, and a secondary east-west trend. The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent basin and range by the eastern extension of the Garlock Fault.

### 3.7.2.2 Local

Chuckwalla Valley is south of the Palen Mountains and also bordered by the McCoy Mountains to the northeast, the Orocopia Mountains to the northwest, and the Mule Mountains to the south (Norris and Webb 1976). The broad valley includes playas that fill intermittently with water to form temporary lakes. The playas are separated from one another by sand dunes. According to the paleontology study for the Project site, the majority of the Project area is covered by surficial deposits of Holocene (< 11,000 years old) alluvial fan/valley sediments that are characterized as sand and sandy gravel (AECOM 2018b). The eastern edge of the Project site and some of the northern edge of the Mule Mountain is mapped as having surficial deposits consisting of Holocene and Pleistocene (between 11,000 and 2.6 million years ago) alluvial fan deposits with surfaces characterized by smooth varnished desert pavement (a surface layer of closely packed or cemented sediments). Along the northern and northwestern sides of the Mule Mountains are deposits described as alluvial deposits made of sand or pebbly sand that is weakly to moderately hardened with lenses of coarser deposits consisting of locally derived gravels. The Holocene wash deposits are characterized as unconsolidated, angular gravels and sand derived from local mountain ranges. For the remainder of this analysis, these deposits will be collectively referred to as unconsolidated alluvial sediments; they are generally considered to have a high potential for settlement and collapse. The valley also includes eolian (wind-blown) sand deposits that form sheets or sand dunes. The Natural Resources Conservation Service (NRCS) has not published a soil survey for the area (NRCS 2018). However, preliminary non-official data from the NRCS indicates that the Project site is underlain by Carsitas (approximately 35 percent), Rositas (approximately 30 percent), Buzzardsprings (approximately 20 percent) soils along with some other minor components (NRCS 2019). These soils tend to consist of coarse sand, sand, loamy coarse sand, or loamy sand that has low runoff because of rapid permeability.

### Sand Migration and Dunes

Sand dune systems form where winds are consistently strong enough to lift just above the ground and push (or "saltate") fine sand grains across the dune surface, especially where little or no vegetation is present to obstruct sediment transport by wind or to stabilize naturally loose soils with plant roots and other organic matter. Sandy alluvium in dry washes and alluvial fans are typical sources for these materials, and strong winds generally transport the sands from source areas to areas downwind with irregular topography, such as at a mountain front, where decreasing wind speeds allow for sand deposition. Except in high-force winds, wind does not typically suspend and transport sand-sized sediments high into the air.

Eolian processes causing sand erosion, transport, migration and deposition play a major role in the formation and transformation of sand dunes in the Chuckwalla Valley, a region of active eolian processes. A series of Chuckwalla Valley dune stretches down the Chuckwalla Valley to the outskirts of Blythe.

Kenney GeoScience (2018) has prepared a report with a conceptual model of the proposed Project to evaluate the dune systems in the vicinity of the Project site and how the proposed Project would affect sand transport and the dune systems. The report, included as Appendix I.3, provides a system for identifying individual Sand Migration Zones (SMZs), defined as regions where eolian sands are eroded and transported from a distinct local source. The Project site intersects four of these SMZs, which from southeast to northeast are Western Mule, Central Mule, Northern Mule, and Mule SMZs. The study hypothesizes that the dune systems within the Project area since the Holocene (i.e., over the last 11,000 years) have been dominantly derived from and influenced by local eolian (windblown) sand sources associated with local fluvial systems (Kenney Geoscience 2018). In the vicinity of the Project site, the largest dune areas (e.g., the Wiley's Well Basin SMZ) are outside of the site boundary, and the study postulates that the source of sand within the Project site is the local washes emanating from the Mule Mountains.

The amounts of sand from Chuckwalla Valley dunefields and alluvial sand from Wiley's Well Wash that reaches the Project area are currently being documented by USGS scientists. The Kenney Geoscience report shows that sand from Wiley's Well Wash migrates to the north and east to the North Wiley's Well SMZ and Wiley's Well Basin SMZ (see Appendix I.3, Figure 11A); however, these SMZs are located outside of the current Project site boundaries. Therefore, ongoing research by the USGS is noted here but is not considered likely to change the understanding of SMZs within the Project site, and this analysis relies on the conclusions made by Kenney Geoscience to define relevant existing conditions.

### Faults and Seismicity

The study area is located in Southern California, a historically seismically active area, although there are no "sufficiently active"[1] faults within a 50-mile radius of the Project site (AECOM 2018). The closest active faults to the Project site are the Hot Springs fault (approximately 50 miles west, the San Andreas fault, (approximately 55 miles west), and the Imperial Fault zone (approximately 60 miles southwest) (Jennings 2010). As a result, the project site and vicinity is considered to have relatively low seismicity. Seismic shaking maps prepared by CGS show the level of ground motion that has 1 chance in 475 of being exceeded each year (equal to 10 percent probability of being exceeded in 50 years) and the project site and vicinity is in an area with peak ground acceleration values of 0 to 0.2g, which is relatively low (CGS 2019).

### Fault Rupture

In accordance with the Alquist-Priolo (AP) Earthquake Fault Zoning Act, the State Geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. While this region of California is seismically active, there are no active faults that cross the Project site, nor does any fault trace cross the Project site that is designated on an Earthquake Fault Zone Map. The San Andreas and Hot Springs fault zones have been delineated on an Earthquake Fault Zone

1 Previously referred to as an "active fault," a "sufficiently active fault" is one that has ruptured sometime in the last 11,000 years (AECOM 2018).

Map and are considered Earthquake Fault Zones (A-P Zone) (CGS 2018), however, due to the distances from the Project site, any surface rupture of these faults would not impact the study area.

### Ground Shaking

The entire Southern California region, including the study area, could be subject to strong ground shaking during earthquakes. The CGS's Probabilistic Seismic Hazards Mapping Ground Motion Page has a 10 percent probability of earthquake-induced ground motion exceeding 0.144 g at the Project site over a 50-year period (AECOM 2018).

In 2015, the 2014 Working Group on California Earthquake Probabilities presented the third Uniform California Earthquake Rupture Forecast (UCERF3). According to this report, there is a 5 percent probability of a $M_W$ 6.7 earthquake, or greater, and a 93 percent probability of a $M_W$ 6.7 or greater earthquake in the Southern California Region over the next 30 years (Field et al. 2015).

### Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occurs when unconsolidated liquefiable material breaks and spreads due to the effects of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Lateral spreading can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure.

The estimated depth of the groundwater at the site is between 137 and 153 feet below the ground surface; therefore, the potential for liquefaction and subsequent lateral spreading is unlikely (AECOM 2018).

### Seismically Induced Landslides

The Project area has not been mapped for the potential of seismically induced landslides (CGS 2019). However, the Project site is not considered to have the potential for permanent ground displacement due to earthquake-induced landslides because surface topography at and near the site is relatively flat. A review of aerial photographs did not identify any active or inactive landslides at the site or in the adjacent areas. The Mule Mountains, directly adjacent to the southern portion of the site, have slopes with angles of 30 percent or greater and have a high potential for earthquake-induced rockfalls and landslides. However, given the relatively flat topography, it is unlikely that falling rocks or landslide materials would reach the edge of the Project site, so the potential for earthquake-induced rockfalls and landslides to affect the site is low (AECOM 2018).

### Settlement and Subsidence

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction. Immediate settlement occurs when a load from a structure is applied, causing distortion in the underlying materials. This occurs quickly and, in sandy soils such as at the Project site, is typically complete after placement of the final load. Soils tend to settle at different rates and by varying amounts, depending on the load or changes in properties over an area. Subsidence can be caused by tectonic movement or through human extraction activities, such as the removal of groundwater, oil, or gas. Subsidence due to groundwater withdrawal has been documented in three regions of Riverside County: the Elsinore Trough, including Temecula and Murrieta; the San Jacinto Valley from Hemet to Moreno Valley; and the closest site, the southern Coachella Valley, all approximately 25 miles or more west of the Project site (AECOM 2018). The Project site is neither within nor adjacent to a site that is undergoing substantive fluid withdrawal that could generate a subsidence effect (AECOM 2018). No subsidence has been documented at the Project site, although the site is in an area considered to be susceptible to subsidence (AECOM 2018). Windblown (eolian) sands may be vulnerable to collapse and hydroconsolidation if they are subjected to long-term wetting. While the Project site is located in a geologic environment where the potential exists for this phenomenon, the potential is considered to be low, provided that measures are implemented as part of the Project design process (AECOM 2018).

#### *Erosion*

Erosion is the weathering away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and surface and underground water. Excessive soil erosion can eventually lead to damage of building foundations and roadways. Generally, areas that are most susceptible to erosion are those that are disturbed during construction phases with the associated grading and excavation activities. Typically, the soil erosion potential is reduced once the disturbed soil is covered with concrete, structures, asphalt, or other permanent ground cover.

## 3.7.3 Analytical Methodology

This section analyzes the potential direct, indirect, and cumulative impacts of the Project and alternatives on geological and soil resources. The analysis also considers the potential for incremental impacts of the Project to become adverse in combination with the impacts of other projects. Measures to avoid or reduce the potential impacts of the Project are identified, as applicable, and the potential for residual impacts is evaluated.

## 3.7.4 Direct and Indirect Effects

### 3.7.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The initial stages of constructing the Project would involve earthwork that would expose soils to erosion. The Project is sited on relatively flat topography and would not involve grading steep slopes; however, earthmoving and construction activities would loosen the soil surface, which could contribute to soil loss and erosion as a result of wind and stormwater runoff. As the Project would disturb more than one acre, it would be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (see Appendix E, Applicable Regulations). As part of these permit requirements, the proponent must prepare and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would specify best management practices (BMPs) to prevent or minimize erosion and soil loss during ground-disturbing activities. Such BMPs could include measures to separate and store topsoil for reuse following completion as part of site revegetation. A Drainage, Erosion, and Sediment Control Plan (DESCP) that includes site-specific BMPs (dust control, entrance/exit stabilization, and erosion/sediment/drainage control BMPs) would be implemented (AECOM 2019; also see Mitigation Measure BIO-14 in Appendix B). This plan, applied to the relatively gentle topography and pervious surface soils at the Project site, is expected to control soil erosion from water and wind within acceptable limits. As a result, the Project would not have an adverse effect related to erosion during construction; however, higher-than-baseline residual erosion may occur after construction ends, where soils do not revegetate quickly or where a high-volume flash flood occurs.

Project operation would include the periodic cleaning of the panels with water. The water from cleaning the panels is expected to quickly soak into the surface or evaporate without running off. However, if runoff were observed, erosion control measures would be implemented in conformance to the DESCP. As a result, washing the panels is not expected to result in any adverse effects related to erosion. For additional discussion of erosion- and sedimentation-related impacts, see Section 3.18, Water Resources.

The Project site is located relatively distant (70 miles) from any active faults, but could experience the effects of seismic activity on one of the regional faults, including the San Andreas or Imperial fault zones. Monitoring data indicate that the groundwater level is approximately 150 feet below ground surface (see Section 3.18.2.2 for detailed discussion on groundwater at the Project site), making the potential for liquefaction hazards remote. However, Project design and construction would be subject to the California Building Code (CBC) and any

Riverside County building code amendments that would require the preparation of a final, design-level geotechnical report. The geotechnical report would include an evaluation of all the geotechnical hazards that may be present, including seismic ground shaking or any secondary effects such as liquefaction, as well as the ability of the soils to support the proposed improvements. The report would be prepared by a California-licensed geotechnical engineer or engineering geologist and would include recommendations for site preparation or foundation design requirements needed to address any identified geotechnical hazards.

The Project site is not currently undergoing, nor is it adjacent to a site that is undergoing, substantive fluid withdrawal that could generate a potential subsidence effect. Therefore, there would be no impacts related to settlement and subsidence.

At the end of Project operation, the solar modules, gen-tie line, and all other improvements would be dismantled and removed from the site. The Project includes a Decommissioning and Reclamation Plan that would incorporate appropriate geotechnical removal methods that would minimize erosion and other geologic concerns. The Decommissioning and Reclamation Plan is provided in Appendix I.13. With implementation of the plan, no adverse effects related to decommissioning would result.

The Project has been designed to avoid active sand dune areas and would not interfere with the sand transport systems identified at this site. The sand transport study conducted for the Project determined that this site is outside of most dune systems in the area (Kenney Geoscience 2018). The dune deposits at the site are relatively thin, stable, and sourced from local washes. The rates of sand migration at the site are very slow and would not be affected by the proposed improvements (Kenney Geoscience 2018).

### 3.7.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.7-1) that differ from Alternative A (see Section 2.5). Alternative B would reduce construction activities, grading, and trenching. Table 3.7-1 summarizes the change in geology and soils impacts under Alternative B, by Design Element.

**TABLE 3.7-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Sand Migration and Dunes | No change | No change | No change |
| Seismicity | No change | No change | No change |
| Settlement and Subsidence | No change | No change | No change |
| Erosion | Minor reduction | Minor reduction | Minor reduction |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation and Decommissioning*

Construction of Alternative B would result in the same impacts to geology and soils as described for Alternative A. However, Alternative B would minimize grading, avoid or limit trenching, and use different foundation systems (i.e., elevated support structures in lieu of solid concrete or steel foundations). As a result, the amount of surface disturbance under this alternative would be reduced and, consequently, the impacts associated with potential erosion related to constructing Alternative B would be reduced relative to Alternative A. Similar to Alternative A, design and construction would be subject to the CBC and any Riverside County building code amendments that would require the preparation of a final, design-level geotechnical report.

Once constructed, Alternative B would generally result in the same impacts on geology and soils, and the same seismic hazards, as described for Alternative A. The improvements proposed under Alternative B would be designed under the same building code requirements as Alternative A. Overall, impacts associated with the operation of Alternative B would be substantially the same as for Alternative A.

Alternative B would undergo the same decommissioning process as Alternative A. Consequently, impacts associated with decommissioning of Alternative B would be the same as Alternative A.

### 3.7.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation and Decommissioning*

Constructing Alternative C would result in similar impacts on geology and soils as described for Alternative A. However, because of the reduced size of Alternative C, the amount of surface disturbance under this alternative would be reduced. Consequently, these impacts associated with construction of Alternative C would be reduced relative to Alternative A. Similar to Alternative A, design and construction would be subject to the CBC and any Riverside County building code amendments that would require the preparation of a final, design-level geotechnical report.

Once constructed, Alternative C would generally result in the same impacts to geology, soils, and seismic hazards as described in Alternative A, but over a smaller area. The improvements proposed under Alternative C would be required to adhere to the same building code requirements as Alternative A. Overall, impacts associated with the operation of Alternative C would be slightly smaller than Alternative A because of the reduced footprint.

Alternative C would undergo the same decommissioning process as Alternative A. However, because of the reduced size of this alternative, the geographic area within Alternative C would be smaller than for Alternative A. This smaller size would limit the area within which soil resources would be impacted and geologic hazards could occur. Consequently, these impacts associated with the decommissioning of Alternative C would be reduced relative to Alternative A.

### 3.7.4.4 Alternative D: No Plan Amendment/No Action/No Project

Under this alternative, none of the components proposed under the Project would be built. If the No Plan Amendment/No Action/No Project Alternative were implemented, there would be no changes to on-site conditions or the existing environmental setting as described above. Thus, the No Plan Amendment/No Action/No Project Alternative would not affect geology or soils.

## 3.7.5 CEQA Significance Thresholds and Determinations

Based on CEQA Guidelines Appendix G, a project would have a significant impact on geology, soil, and seismicity if it would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault Refer to Division of Mines and Geology Special Publication 42
   ii. Strong seismic ground shaking
   iii. Seismic-related ground failure, including liquefaction
   iv. Landslides

b) Result in substantial soil erosion or the loss of topsoil.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse caused in whole or in part by the Project's exacerbation of the existing environmental conditions.

d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property caused in whole or in part by the Project exacerbating the expansive soil conditions.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

### 3.7.5.1 Alternative A: Proposed Action

**Impact 3.7.5a: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, or landslides? (*Less than significant*)**

#### Construction, Operation and Decommissioning

**Fault rupture.** There are no active faults located within 50 miles of the Project site. Therefore, the potential for fault rupture to occur anywhere within or near the Project site is very remote. In addition, the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. As a result, there would be no impact.

**Ground shaking.** The Project site is not located in an area considered to have high seismic activity. However, light to moderate ground shaking could occur at the site in the event of an earthquake generated from the Imperial fault zone (USGS 2016). The Project would be subject to the seismic design criteria of the CBC, which requires that all improvements, especially any occupied structures such as the Operations and Maintenance facility, be constructed to withstand any anticipated ground shaking from regional fault sources. Prior to the issuance of grading permits, the Applicant would be required to retain a licensed geotechnical engineer to design the Project facilities to withstand probable seismically induced ground shaking. All construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations of a California-registered, professional geotechnical engineer in accordance with CBC and Riverside County building code amendments. In addition, the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts would be less than significant.

**Seismic-Related Ground Failure.** Saturated cohesionless soils within 50 feet of the ground surface can be susceptible to liquefaction and/or ground failure that could cause substantive damage to proposed improvements. Lateral spreading, related to liquefaction, is a phenomenon that occurs when liquefiable materials are displaced by lateral movement on an exposed slope or face. Both liquefaction and lateral spreading can lead to seismically-induced settlement when the rearranged sediments result in settlement or subsidence. Based on well data in the vicinity of the site, the depth of water is estimated at approximately 150 feet below ground surface. As a result, the potential for liquefaction would be low at the Project site. Regardless, the Project proponent is required to design proposed improvements in accordance with applicable CBC seismic design standards, as adopted by Riverside County, and as recommended by a California-registered professional geotechnical engineer in the site-specific geotechnical review. As part of the final, design-level geotechnical report, and consistent with building code seismic design standards, the licensed geotechnical engineer would be required to consider potential liquefaction and related lateral spreading/seismically induced settlement in the final design plans. However, based on the conclusions given in the Desktop Geotechnical Study performed by AECOM (see Appendix M.1), the potential for liquefaction at the Project site is considered unlikely due to the estimated depth of the groundwater. In addition, the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure. As a result, impacts would be less than significant.

**Landslides.** The Project site is located in an area that is not included on any regulatory landslide susceptibility maps (AECOM 2018), and, due to the relatively level topography, the potential for such an event is considered low. The geotechnical investigation did not identify any evidence for active or inactive landslides at or near the Project site. In addition, because Project construction would occur on relatively flat to gently sloping topography, the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving landslides. As a result, impacts would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.7.5b: Would the Project result in substantial soil erosion or the loss of topsoil? (*Less than significant with mitigation incorporated*)**

### Construction, Operation, and Decommissioning

Construction and decommissioning would involve earthwork activities that could expose soils to erosion. The proposed solar facility and gen-tie line are located on relatively flat topography and would not involve grading steep slopes; however, earthmoving and construction activities would loosen soil and could contribute to soil loss and erosion by wind and stormwater runoff. The requirements of the NPDES Program provide that a SWPPP would be prepared and implemented. The SWPPP would specify BMPs to prevent disturbed soils (such as topsoil) from moving off-site. As described above, a DESCP has already been prepared for the site that describes the site-specific BMPs that would be used. Also, the Project would implement Mitigation Measures BIO-5, BIO-14, BIO-18 and BIO-19 to reduce the potential for erosion. Given the relatively flat topography and pervious surface of the Project site, and implementation of the BMPs described in the DESCP, soil erosion from water runoff is likely to be controlled to acceptable levels. With implementation of Mitigation Measures BIO-5, BIO-14, BIO-18, and BIO-19, the Project would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

### Mitigation Measures

Mitigation Measures BIO-5, BIO-14, BIO-18, and BIO-19.

### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measures BIO-5, BIO-14, BIO-18, and BIO-19.

**Impact 3.7.5c: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse caused in whole or in part by the Project's exacerbation of the existing environmental conditions? (*Less than significant*)**

### Construction, Operation, and Decommissioning

The Project site is located on a relatively flat alluvial fan. The surface soils include alluvial soils composed of gravel, sand, and silt as well as wind-blown eolian deposits. Due to the generally flat topography on and adjacent to the Project site, there is a very low potential for landslides to occur, and, due to the estimated groundwater depth (137 to 153 feet below ground surface), liquefaction and subsequent lateral spreading is unlikely. Additionally, the site is not located in an area undergoing substantive fluid (oil, water, etc.) withdrawal that could generate a potential subsidence effect. No subsidence has been reported at or in the vicinity of the Project site. As described in Section 3.18, Water Resources, the Project would not cause a regional lowering of groundwater levels. Therefore, Project water withdrawals would not cause subsidence. The Project site is composed of unconsolidated alluvial and eolian sediments which may have a potential for settlement and/or soil collapse. However, the Project is required to comply with CBC and Riverside County building code amendments to withstand the effects of settlement or collapsible soils. In addition, underlying geologic units would not become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, impacts would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.7.5d: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property caused in whole or in part by the Project exacerbating the expansive soil conditions? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

Expansive soils typically include clay content that can expand and contract over time with cyclical changes in moisture. According to the desktop geotechnical study, site-specific information regarding expansive soils was not available at the time of preparation for that study, and a geotechnical site investigation would be required to obtain that information. Based on the geologic maps, surface deposits at the Project site are generally composed of gravels, sands, and silts, and, as such, the expansion potential is low (AECOM 2018). The Project would be required by the CBC to prepare a final, design-level geotechnical report, which would include site investigations. If these investigations find expansive soils at the Project site, the report would include recommendations to ensure that any structural impacts resulting from expansive soils on-site would be avoided. Additionally, the Project would be designed to comply with California and Riverside County Building Code requirements to withstand the effects of expansive soils. Adherence to the design and code requirements would avoid impacts resulting from potentially expansive soils on the Project site and along the gen-tie line route. In addition, the Project would not create substantial direct or indirect risks to life or property related to expansive soils, and impacts would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.7.5e: Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (*No Impact*)**

#### Construction, Operation, and Decommissioning

The Project would employ portable sanitary waste facilities for employee use and would not require septic or alternative waste water disposal systems. The portable sanitary facilities would be emptied as needed by a contracted wastewater service vehicle and disposed off-site. There would be no impact related to this criterion.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

## 3.7.5.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

Alternative B includes elements that, if implemented, would reduce the extent of ground disturbance, so it is likely that this alternative would result in reduced impacts on geologic and soils resources during construction and decommissioning. The operation of the facility would remain the same as under Alternative A. The significance conclusions for the impacts identified for each phase of Alternative B (construction, operation, and decommissioning) would be the same as described above for Alternative A. Impacts relating to geology and soils would be less than significant.

### 3.7.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would be reduced in size compared with Alternative A, so it is likely that this alternative would result in reduced impacts to geology and soils. The construction techniques and operation of the facility would remain the same as in Alternative A; therefore, the significance conclusions for the impacts identified for each phase of Alternative C (construction, operation, decommissioning) would be the same as described above for Alternative A. Impacts relating to geology and soils would be less than significant.

### 3.7.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project Alternative would result in no impacts concerning geologic risk factors and soils resources.

## 3.7.6 Cumulative Effects

### 3.7.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The Project would have no impact related to fault rupture or effects on soils as a result of the use of septic tanks and other wastewater disposal systems; therefore, it could not contribute to cumulative impacts in these areas. With respect to seismic and other geotechnical hazards such as subsidence, expansive soils, and other unstable soil conditions, these impacts are specific to the affected site and its features, and do not extend beyond the site boundary. The geologic and geotechnical impacts from one project cannot combine with impacts from one or more other projects to cause a cumulative effect. Therefore, no significant cumulative impact would occur to which the Project could contribute.

With respect to soil resources and the potential for erosion and loss of topsoil, impacts from the Project could combine with the effects of other projects, for example if they contributed sediments to the same waterways (i.e., channels emptying into the playa lake northwest of the site, described in Section 3.18.2.2). The Desert Quartzite Project could be one such contributor. Cumulative impacts would be significant if substantial erosion or loss of topsoil occurred within these two adjacent sites and combined to impair flows or other adverse effects on waterways. In this case, implementing the Project SWPPP required by NPDES regulations and the DESCP would limit sediment transport within the Project boundaries and prevent sediment transport into waterways. Therefore, the potential for this Project to contribute to significant cumulative soil erosion impacts would be low, and with adherence to required procedures in the SWPPP and DESCP, it would not have a cumulatively considerable contribution to a significant cumulative impact.

During construction, minor alterations in topography and the addition of impervious surfaces would occur that would persist throughout the Project's service life. Adherence to drainage control requirements for the management of stormwater runoff would minimize the potential for erosion and sediment transport outside the Project boundaries. With implementation of Mitigation Measures BIO-5, BIO-14, BIO-18, and BIO-19, the Project's effects would be reduced and site-specific enough that they would not contribute to cumulative impacts of erosion from other projects.

### 3.7.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

As noted above, implementing the Design Elements of Alternative B would reduce the extent of ground disturbance, and so this alternative would generally have a lower potential to combine impacts cumulatively with other projects. The same geologic hazards would exist as for Alternative A; but they would be site specific and could not combine impacts with other projects at other locations. Therefore, there would be no significant cumulative effects from geologic hazards such as seismic ground shaking, subsidence, expansive soils, and other unstable soil conditions. The reduced ground disturbance during construction activities would reduce the area of soils exposed to the erosive effects of wind and water. Under this alternative the Project would be required to implement an SWPPP in accordance with NPDES regulations, the same as described above for the Project. Impacts relating to geology and soils would not have a cumulatively considerable contribution to a signification cumulative impact for similar reasons to the Alternative A.

### 3.7.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would have the same impacts as Alternative A, but over a smaller footprint. For the same reasons provided in the cumulative analysis of Alternative B, Alternative C would not combine with other projects to create significant cumulative impacts.

### 3.7.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, the BLM would not authorize the Project and the proposed improvements would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations. There would be no change to the existing geologic hazards or drainage conditions on the Project site, and thus no contribution to cumulative geology or soil erosion impacts.

## 3.7.7 Residual Effects

Alternatives A, B, and C would require implementation of the prescribed mitigation measures and implementation of regulatory requirements to ensure that erosion and loss of topsoil is minimized during construction and all proposed improvements are designed to withstand all geotechnical hazards present. Compliance with existing regulatory requirements and the prescribed mitigation measures (see above) would minimize direct, indirect, and cumulative impacts related to geology and soils; however, minor residual impacts related to erosion from loss of stabilizing vegetation or surface soil structures (e.g., crusts, desert pavement) would persist until vegetation and soil crusts reestablish.

# 3.8 Hazards and Hazardous Materials

## 3.8.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning hazards and hazardous materials. The regulations applicable to this analysis are summarized in Appendix E.

The existing environment, direct and indirect effects, and mitigation measures related to geologic and seismic hazards are discussed in Section 3.7, Geology and Soils; impacts related to the potential release of toxic air contaminants are discussed in Section 3.2, Air Resources; and wildfire-related impacts are discussed in Section 3.19, Wildland Fire Ecology.

## 3.8.2 Regional and Local Environmental Setting

### 3.8.2.1 Definition of Hazardous Materials

Hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code Section 25501(o)). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

### 3.8.2.2 Sensitive Receptors and Existing Contaminated Sites

The general population includes many sensitive subgroups that could be at risk from exposure to emitted pollutants. Sensitive receptors are people who are particularly susceptible to illness, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise, or locations or institutions that may be occupied predominantly by one or more of these sensitive subgroups, such as residences, schools, hospitals, and hospices. The location of the population in the area surrounding a project site may have a major bearing on health risk.

In some cases, past industrial or commercial activities on a site have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. If improperly handled, this contamination can threaten public health if released from the soil, groundwater, or into the air. The four primary pathways through which an individual can be exposed to a hazardous material are inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release of hazardous materials during transport, storage, or handling. Disturbance of contaminated subsurface soil during construction can also cause exposures to workers, the public, or the environment through stockpiling, handling, or transport of soils.

There are no schools or daycare facilities within a quarter mile of the Project site boundary. The nearest residence is 2.9 miles west of the Project. The closest schools to the Project site are the Escuela De La Raza Unida and Twin Palms High School, both located approximately 15 miles east of the site. The nearest daycare facility, Palo Verde Daycare, is also located approximately 15 miles east of the site. The Palo Verde Hospital is located approximately 16 miles east of the site. Also, the Chuckawalla Valley State Prison and Ironwood State Prison are located 2.9 miles west of the Project site.

According to a review of available site contamination databases maintained by the State Water Resources Control Board (Geotracker) and the Department of Toxic Substances Control (DTSC), there are no known previously contaminated sites of concern located within or near the study area (SWRCB 2018 and DTSC 2018).

### 3.8.2.3 Airports

The closest airport to the Project site is the Blythe Airport, located approximately 5 miles east of the site.

### 3.8.2.4 Electromagnetic Fields

Electromagnetic fields (EMFs) are associated with electromagnetic radiation, which is energy in the form of photons. Radiation energy spreads as it travels and has many natural and human-made sources. The electromagnetic spectrum, the scientific name given to radiation energy, includes light, radio waves, and X-rays, among other energy forms. Electric and magnetic fields are common throughout nature and are produced by all living organisms. Concern over EMF exposure, however, generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems.

Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation added to natural background sources are low. Electric voltage (electric field) and electric current (magnetic field) from transmission lines also create EMFs. Power-frequency EMF is a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. The conclusions and findings included the following:

> *We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.*

This continues to be the stance of the CPUC regarding standards for EMF exposure. Currently, the state has not adopted any specific limits or regulations regarding EMF levels from electric power facilities.

### 3.8.2.5 Munitions and Explosives of Concern and Unexploded Ordnance

As part of World War II military efforts, a Desert Training Center (DTC) facility was created for training troops in desert conditions, which included a collection of military camps that extended from Desert Center in California to the Colorado River, as far north as Searchlight, Nevada, and as far south as Yuma, Arizona. The Phase I Environmental Site Assessment that was prepared for the Project site included a review of historic documents that suggest the Project site includes portions of one of these military camps known as Wiley Well Water Point (Stantec 2018). Munitions debris was found in the Wiley Well Water Point site in an area that is approximately a half-mile south of the Project boundary (Stantec 2018). The Phase I report also included a review of a Site Characterization Report that was conducted to evaluate the potential for munitions and explosives of concern (MEC) and unexploded ordnance (UXO). This report identified practice landmines and small-arms ammunition found on the Project site (shown in Figure 2 of Stantec 2018, see Appendix N.1). The Phase I report also noted a linear feature seen in a 2002 aerial photograph that was located in the Wiley Well Water Point camp area overlapping the Project site boundary. As a result, the Phase I concluded that MEC and UXO could be present at the Project site (Stantec 2018).

## 3.8.3 Analytical Methodology

This section analyzes the potential effects of the Project and alternatives related to hazards and hazardous materials. The following is based on an evaluation of Project characteristics, existing site conditions, and applicable regulatory requirements.

## 3.8.4 Direct and Indirect Effects

### 3.8.4.1 Alternative A: Proposed Action

#### *Construction, Operation and Decommissioning*

Construction activities may require the use of various hazardous materials, which could include fuels, lubricants, paints, oils, and solvents. If not handled appropriately, the use, storage, and disposal of these materials could potentially impact the health and safety of construction workers, residents, and the environment. All hazardous wastes, or contracts for the transportation of hazardous wastes, would be handled in accordance with the U.S. Department of Transportation, U.S. Environmental Protection Agency, California Highway Patrol, and California DTSC regulations. As there would be regulated hazardous materials used and stored on-site during Project construction, storage procedures would be dictated by a Hazardous Materials Business Plan (HMBP) that would be developed prior to construction. A HMBP would be required for this Project pursuant to California Health and Safety Code Section 25501(m) and would be reviewed by the Riverside County Department of Environmental Health (DEH). Mitigation Measure BIO-8, Hazardous Spills, requires the implementation of spill prevention measures (see Section 3.3, Biological Resources and Appendix B for details). When the storage of hazardous materials within or near work areas is required, the quantities of hazardous materials stored would be minimized and the materials stored in closed containers located away from drainage courses, storm drains, and areas of stormwater infiltration. In addition, hazardous liquids, wastes, and chemicals would be stored in watertight containers with secondary containment to prevent any spillage or leakage.

It is not anticipated that any extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the CFR) would be produced, used, stored, transported, or disposed during Project construction. Safety Data Sheets as required pursuant to 29 CFR 1910.1200(g) and authorized by the Occupational Safety and Health Act of 1970, for all applicable materials present on-site would be made readily available to on-site personnel.

Dust palliatives could be used during construction to control dust. These palliatives could include chemicals that pose a threat to worker health if not managed appropriately. However, in accordance with implementation of the HMBP, these materials would be stored in appropriate containers to prevent their accidental release at the site and workers would be appropriately trained in their application and in spill control measures. Implementation of these measures would not guarantee against any accidental exposure, but it would reduce the likelihood of exposure and provide measures to contain and protect workers and the environment from any adverse effects.

As noted above, past land uses at the site included World War II desert military training operations; it is possible that UXO and MEC may be present at the Project site (Stantec 2018). Prior to beginning construction, a pre-construction UXO and MEC investigation would be conducted to ensure that if subsurface UXO/MEC hazards are present at the site, they are removed by a qualified contractor. Therefore, there would be no adverse effects from any UXO/MEC that may be present at the site.

No waters of the U.S. are present within the Project site; therefore, Section 402 of the Clean Water Act does not apply and the Applicant would not be required to obtain a National Pollution Discharge Elimination System (NPDES) permit for construction. However, comparable water quality protections would result from implementation of the HMBP as well as the Stormwater Management Plan required under Mitigation Measure BIO-14. Accordingly, construction activities would handle, store, and dispose of hazardous materials such that unauthorized releases would be minimized. As a result, there would be no adverse effects related to hazardous materials during construction.

Once construction activities are completed, operations and maintenance activities would be relatively minimal because they would not involve the routine use of significant quantities of hazardous materials. Any hazardous materials that would be used would be stored on-site and in designated areas in accordance with the HMBP. Adherence to the required HMBP as required by the California Hazardous Materials Release Response Plans and Inventory law would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to workers or the public.

The photovoltaic (PV) modules that would be installed on the Project site use thin-film technology using cadmium telluride (CdTe), copper indium gallium diselenide, crystalline silicon modules, or other commercially available PV technology. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions.[1] The Project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. These protocols would also be identified as part of the HMBP.

The Project would connect to the existing Southern California Edison (SCE) Colorado River Substation. Other facilities associated with the Project would include solar tracking systems, voltage inverters and step-up transformers, pole mounted breaks, four substations, battery energy-storage units, and telecommunication equipment, all of which are potential sources of EMF. Some people believe EMF to be responsible for health effects including neurological problems, cancer, Alzheimer's disease, dementia, Parkinson's disease, and depression; however, these concerns are not supported by any study that has been scrutinized with normal scientific rigor or that has met outside scientific review, been submitted to a scientific journal for review by independent scientists, or published in a scientific journal. Further, no federal, state, or local standards regulate EMF from power lines or related facilities. EMF exposure diminishes rapidly with distance (NIEHS 2002). The closest residence and the prisons are located 2.9 miles away and the closest daycare, school, or hospital is 15 miles away. Based on the scarcity of sensitive receptors in the immediate vicinity of the gen-tie lines, the potential for adverse effects from EMF exposure as a result of the Project would be very low.

Ongoing maintenance would involve weed control activities, including the potential use of use of herbicides. Herbicide control would be done according to the Weed Management Plan, which includes only California BLM-approved chemicals. The Weed Management Plan is consistent with the BLM's 2007 Programmatic Environmental Impact Statement for vegetation management using herbicides and updated in Information Bulletin No. 2012-022 (December 2011). The process for treatments is characterized in the Weed Management Plan followed by a Pesticide Use Proposal for specific chemical treatments (both approved by the BLM), which address management measures for herbicide application and to minimize any potential for spills or exposure hazards. The Weed Management Plan is included in Appendix I.10.

Other maintenance activities, including building and property maintenance, would also include the use of relatively small quantities of various hazardous materials such as fuels, oils, solvents, paint, and cleaning agents. All hazardous materials would be managed, stored, transported, and disposed of in accordance with the HMBP for the site. Implementation of the HMBP would ensure that hazardous materials are managed in a manner that minimizes releases and provides means to address any spills should they occur. As a result, there would be no adverse impacts related to exposure of hazardous materials during operation and maintenance activities.

It is anticipated that decommissioning and site restoration would return the site to its present-day (pre-Project) conditions to the extent feasible. Decommissioning is addressed in a Decommissioning Plan (Appendix I.4). Briefly, decommissioning would include removal of all Project structures and electrical equipment and reclamation of disturbed areas. Equipment would be de-energized prior to removal. Equipment would be

[1] The PV modules conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third-party testing laboratory certified by the IEC. In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703, a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis 2003).

shipped off-site by truck to be salvaged, recycled, or disposed of at an appropriately licensed disposal facility in accordance with all federal and state transportation regulations related to transport of hazardous materials.

The solar panels would be recycled to the extent feasible. As a result, minimal disposal to landfills is expected to occur. For those panels that were disposed of at a landfill, as current thin-film PV modules pass federal leaching criteria for non-hazardous waste, this disposal would not pose a significant risk for cadmium leaching. In addition, several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules (Fthenakis 2003). These studies consistently have concluded that CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Therefore, decommissioning and disposal of Project components, including the solar panels, would have no adverse effects related to the routine transport, storage, and disposal of hazardous materials.

### 3.8.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2 and DE-3 in Table 3.8-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.8-1 summarizes the change in impacts related to hazards and hazardous waste materials impacts under Alternative B, by Design Element.

**TABLE 3.8-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Hazardous Materials | No change | No change | No change |
| Sensitive Receptors and Existing Contamination | No change | No change | No change |
| Electromagnetic Fields | No change | No change | No change |
| UXO/MECs | Minor reduction | Minor reduction | Minor reduction |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

The Alternative B Design Elements would involve less ground disturbance but overall would be relatively similar to Alternative A in the use of, and the need for managing hazardous materials during construction, operation, and decommissioning activities. The regulatory requirements and measures taken to manage the transport, storage, use, and disposal of hazardous materials would be consistent with that described for Alternative A. The reduction in ground disturbance would reduce the potential for actually encountering any existing contamination or UXO/MECs. As noted above, there are no documented spill sites on or near the Project site. In addition, despite the reduced ground disturbances, prior to commencement of construction, a UXO/MEC hazard investigation would still be conducted as also described above in Alternative A. With the implementation of the HMBP and proposed management measures described above under Alternative A, Alternative B has similar or identical potential to result in adverse effects compared to Alternative A.

### 3.8.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would involve a smaller footprint, with a corresponding reduction in ground disturbance and the use of hazardous materials for all project phases compared to Alternative A. However, the reduction would not be substantial; the potential risks would be similar to the risks under Alternative A. The regulatory requirements and measures taken to manage the transport, storage, use, and disposal of hazardous materials would be consistent with those described for Alternative A. The reduction in ground disturbance would reduce the potential to encounter any existing contamination or UXO/MECs. However, as noted above, there are no documented spill sites on or near the Project site, and a UXO/MEC hazard investigation and removal program would still be conducted as described above in Alternative A. With implementation of the HMBP and proposed management measures described above under Alternative A, Alternative C would overall have a slightly reduced potential to result in adverse effects compared to Alternative A.

### 3.8.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, there would be no ground disturbance, no construction, no weed management, and no use of hazardous materials on-site. If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, no adverse effects would occur.

## 3.8.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on risks associated with Hazards and Hazardous Materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, has the potential to exacerbate the current environmental conditions so as to create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, have the potential to exacerbate current environmental conditions so as to result in a safety hazard or excessive noise for people residing or working in the Project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

### 3.8.5.1 Alternative A: Proposed Action

**Impact 3.8.5a: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

The use, storage, and disposal of hazardous materials and wastes could result in potential adverse health and environmental impacts if these materials were used, stored, or disposed of improperly, and if accidents or spills occurred and not properly managed. The potential direct and indirect impacts of such releases could degrade soil and water quality or expose humans and the environment to the harmful effects of hazardous materials.

Hazardous or flammable materials used during construction of the Project would consist primarily of small volumes of petroleum hydrocarbons and their derivatives (e.g., fuels, oils, lubricants, and solvents) required for the operation of construction equipment. These materials would be those routinely associated with the operation and maintenance of heavy construction equipment or other support vehicles, such as gasoline, diesel fuels, and hydraulic fluids. In addition to these hazardous materials, it is anticipated that small quantities of additional common hazardous materials would be used on-site during construction, including antifreeze and used coolant, latex and oil-based paint, paint thinners and other solvents, cleaning products, and herbicides. The Project would be required to implement a HMBP pursuant to California Health and Safety Code Section 25501 (m) and would be reviewed by the DEH. In addition, the Project would provide Safety Data Sheets to on-site personnel as required pursuant to 29 CFR 1910.1200(g) and authorized by the Occupational Safety and Health Act of 1970, for all applicable materials present on-site. Through implementation of all applicable federal, state, and local requirements regarding the transport, use, and disposal of hazardous materials or wastes, including adherence to the HMBP prepared for the site and provision of the Safety Data Sheets (see Section 3.8.4.1 for details), the potential impacts to the public or environment, related to the routine transport, use, or disposal of hazardous materials, would be reduced to less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.8.5b: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (*Less than significant with mitigation incorporated*)**

#### Construction, Operation, and Decommissioning

As described above, construction, operation, and decommissioning of the Project would require limited use of hazardous materials. Implementation of the spill prevention measures consistent with Mitigation Measure BIO-8 (see Appendix B), would ensure that the potential for accidental release would be minimized and, if a release did occur, there would be protocols and measures available (as described in Mitigation Measure BIO-8) to contain a spill. This impact would be less than significant with mitigation incorporated.

#### Mitigation Measures

Implement Mitigation Measure BIO-8 (Hazardous Spills).

#### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measure BIO-8.

**Impact 3.8.5c: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (*No impact*)**

#### Construction, Operation, and Decommissioning

There are no existing or proposed schools located within 0.25 mile of the Project site. There would be no impact.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.8.5d: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (*Less than significant*)**

### Construction, Operation, and Decommissioning

As noted above, the Project site is not identified on any of the available site contamination databases as a potential location of a significant hazard to the public or environment (SWRCB 2018; DTSC 2018). The Phase I report concluded that MEC and UXO may be present at the Project site (Figure 2 of Stantec 2018, see Appendix N.1). However, as discussed under 2.4.3.1, Preconstruction Activities, prior to commencement of construction activities, a pre-construction UXO and MEC investigation would be conducted to ensure that there are no subsurface UXO/MEC hazards present at the site from prior military operations. If found, all UXO/MEC hazards would be removed by a qualified contractor prior to commencement of construction activities. There would be a less-than-significant impact.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.8.5e: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area? (*No impact*)**

### Construction, Operation, and Decommissioning

The Project site is located approximately 5 miles from the nearest airport, the Blythe Airport. No portion of the Project site is within the Compatibility Zones established in the Airport Land Use Compatibility Plan for this airport (Riverside County Airport Land Use Commission 2004). There would be no safety hazard or excessive noise for people residing or working in the Project area related to proximity to an airport (see also Section 3.10, Noise, for further discussions on noise impacts).

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.8.5f: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (*No impact*)**

### Construction, Operation, and Decommissioning

The Project site is not located within an adopted emergency response plan or emergency evacuation plan. In addition, the Project is located in a very sparsely populated area and would not interfere with the existing transportation network. Also, operation of the site would involve very few on-site workers. Therefore, the Project would not impair or physically interfere with any emergency response or evacuation plan. There would be no impact.

### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.8.5g: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (*Less than significant with mitigation incorporated*)**

#### Construction, Operation, and Decommissioning

As described in detail in Section 3.19, Wildfire Ecology, the Project site is located within a moderate fire hazard severity zone (not high or very high), and the occurrence of wildfires in the study area historically has been low. However, repeated fires are known to decrease perennial plant cover and to aid some invasive annual plants, such as Saharan mustard and Russian thistle. The spread of invasive plants, especially annual grasses, creates an increased potential for wildfires, which can result in ecological change. Additionally, a fire originating on the Project site could spread off-site, increasing potential damage to off-site biological resources, and could impact air and water quality, or threaten other projects or structures (i.e., the Colorado River Substation and/or Chuckwalla Valley and Ironwood State Prisons) and pose a risk of loss, injury, or death. If the spread of invasive, non-native plants is not controlled during construction, over time the Project site could become dominated with non-native plants that tend to increase the frequency and severity of wildfires, potentially causing a significant impact.

Implementation of the Weed Management Plan required by Mitigation Measure BIO-16 would not completely eliminate the introduction of invasive plants to the study area, but would minimize their introduction and control their spread on the Project site. To minimize the potential for wildfires caused by construction-related activity, the Project would implement Mitigation Measures BIO-15 (Wildfire Prevention) and FIRE-1 (Fire Safety Plan) during construction. These mitigation measures outline requirements for reducing potential Project-related ignitions, including parking and tool/equipment storage requirements, spark-generating equipment usage requirements, personnel training, communications and reporting requirements, identification of evacuation procedures, long-term project monitoring, and fire agency coordination, among others. The Fire Safety Plan would be submitted to BLM and RCFD prior to issuance of a Notice to Proceed with Project construction. Implementation of the Project's Weed Management Plan, as required by Mitigation Measure BIO-16, and of Mitigation Measures BIO-15 (Wildfire Prevention) and FIRE-1 (Fire Safety Plan), would reduce construction-related contributions to wildfire risk to less than significant.

#### Mitigation Measures

Mitigation Measures BIO-15 (Wildfire Prevention), BIO-16 (Weed Management), and FIRE-1 (Fire Safety Plan).

#### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measures BIO-15, BIO-16, and FIRE-1.

## 3.8.5.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

There would be less ground disturbance under this alternative and thus a reduced potential to encounter any contamination or UXO/MECs. However, as noted above, there are no documented hazardous materials releases on or near the Project site. In addition, Alternative B would still include a pre-construction UXO/MEC investigation, which would reduce the potential for encountering any UXO/MECs. The HMBP prepared for the site would also be implemented under this alternative such that the potential impact related to the routine transport, use, or disposal of hazardous materials would be similarly reduced to less than significant. Therefore, this alternative would have a less-than-significant impact related to hazardous materials. The impact related to wildland fires would be the same as Alternative A, less than significant with mitigation incorporated.

### 3.8.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would require less ground disturbance than Alternative A and would therefore have reduced potential to encounter any contamination or UXO/MECs. However, as noted above, there are no documented hazardous materials releases on or near the Project site. In addition, Alternative C would include a pre-construction UXO/MEC investigation, which would reduce the potential for encountering any UXO/MECs. The HMBP prepared for the site would also be implemented under this alternative such that the potential impact related to the routine transport, use or disposal of hazardous materials would be similarly reduced to less than significant. Therefore, this Alternative would have a less-than-significant impact related to hazardous materials. The impact related to wildland fires would be the same as Alternative A, less than significant with mitigation incorporated.

### 3.8.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The Project would not be constructed under this alternative. No changes would occur, and the existing environmental setting would be maintained. Therefore, there would be no impact.

## 3.8.6 Cumulative Effects

### 3.8.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The geographic scope of cumulative effects from hazards and hazardous materials near schools or airports/airstrips is 0.25 mile from an existing or proposed school, or 2 miles of an airport or private airstrip, based on Appendix G of the CEQA Guidelines. No other past, present, or foreseeable projects exist within this scope for this Project to contribute to cumulative impacts. In addition, there would be no impact on adopted emergency response or evacuation plans. Therefore, the Project would have no contribution to a cumulative effect related to these criteria.

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; this pertains to all projects identified in Table 3.1-1. Materials delivery routes also would be included in the event of a traffic-accident-related spill. The temporal scope of hazardous materials impacts would occur throughout the life of the Project. An accident involving a hazardous materials release during Project construction, operations, maintenance, or decommissioning would be contained and managed according to the procedures of the HMBP (see Mitigation Measure BIO-8 in Appendix B), limiting their effects to roadways used to access the Project site and the time of occurrence. In addition, for all applicable materials present on-site, Safety Data Sheets, as required pursuant to 29 CFR 1910.1200(g) and authorized by the Occupational Safety and Health Act of 1970, would be made readily available to on-site personnel. As a result, it is unlikely that releases from this site could occur at the same time and combine with those from any other site to create a significant cumulative impact.

### 3.8.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

As discussed above, the impacts of Alternative B with respect to hazards and hazardous materials would be the same or slightly less than that described for Alternative A because of the reduction in construction activities. Alternative B would involve less grading and a shorter construction period. As a result, the potential for encountering any contamination or UXO/MECs would be reduced. Additionally, these types of incidents tend to be site specific and do not combine with other projects because their effects are limited to the Project footprint, either by the nature of the occurrence (e.g., UXO/MECs) or by implementing the control measures of an HMBP (hazardous spills). The regulatory requirements would be the same for Alternative B as for Alternative A.

Therefore, the potential for Alternative B to contribute to cumulative impacts with respect to hazards and hazardous materials would be approximately the same as, or slightly less than, described for Alternative A.

### 3.8.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

As discussed above, impacts of Alternative C with respect to hazards and hazardous materials would be lower than that described for the Project because Alternative C would occupy a smaller land area, disturb a smaller area that could contain UXO/MECs, and would occur over a shorter construction or decommissioning period. The effects of UXO/MECs and other hazardous materials tend to be site specific and do not combine with other projects because their effects are limited to the Project footprint, either by the nature of the occurrence (e.g., UXO/MECs) or by implementing the control measures of an HMBP (hazardous spills). Therefore, the potential for Alternative C to contribute incrementally to cumulative impacts with respect to hazards and hazardous materials would be slightly less than described for Alternative A during construction and decommissioning, and approximately the same as Alternative A during operations.

### 3.8.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, BLM would not authorize the Project, and the Project would not be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations, no changes would occur, and the existing environmental setting would be maintained. Alternative D would not contribute to cumulative hazards or hazardous materials impacts.

## 3.8.7 Residual Effects

With implementation of existing regulatory requirements and Mitigation Measure BIO-8, there would be no residual effects.

# 3.9 Land Use, Lands, and Realty

## 3.9.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning lands use, lands, and realty. Regulations applicable to this analysis are summarized in Appendix E.

Potential land use conflicts are identified and evaluated in this section based on existing land uses and authorized and pending land uses, including land uses proposed as part of the Project and alternatives. The evaluation also considers Federal land use designations established in the Federal Land Policy and Management Act of 1976 (FLPMA), the California Desert Conservation Area (CDCA) Plan, and in the Bureau of Land Management (BLM) land use standards and policies (such as those governing site management), as well as in the context of the cumulative scenario (presented in Section 3.1.5.2). If BLM approves the Project or an action alternative, a project-specific CDCA Plan amendment would be required to identify the site as suitable for the use type (as described in Section 2.3). As a portion of the gen-tie would be located outside of the established utility corridors (BLM Utility Corridor K and Section 368 Federal Utility Corridor 30-52), the Project or an action alternative would require a project-specific land use plan amendment of the CDCA Plan. A resource-specific discussion of the Project's consistency with CDCA Plan is provided in Appendix G.

## 3.9.2 Environmental Setting

The Project's requested right-of-way (ROW) area consists of 2,500 acres of undeveloped land located entirely within BLM-administered lands in eastern Riverside County, encompassing portions of Sections 12, 13, 24, and 25 within Township 7 South, Range 20 East, and portions of Sections 7, 8, 17, and 18 within Township 7 South, Range 21 East, San Bernardino Meridian, California. Project site access would be provided via an existing road within Sections 1 through 4 of Township 7 South, Range 20 East, and Section 7 of Township 7 South, Range 21 East. The Project site is located within the Riverside East Solar Energy Zone as noted in the BLM Western Solar Plan and CDCA Plan, and situated in a geographic area identified as Multiple Use Class-Moderate (MUC-M) in the CDCA Plan. The specific regulatory context that would be applicable for the construction, operation, maintenance, and decommissioning of the Project and alternatives is provided in Appendix E.

The Project site is currently vacant and consists of undeveloped desert lands. Land uses in the areas surrounding the site include an interstate transportation corridor (I-10), other undeveloped BLM-administered lands, access roads (some with recreational uses), private lands, the Chuckawalla Valley and Ironwood State Prisons, and industrial/utility uses such as a communication site at Wiley's Well Road and I-10, the Southern California Edison (SCE) transmission corridor, and the Colorado River Substation (CRS). A discussion pertaining to existing (off-and on-road) vehicle routes is provided in Section 3.12, Recreation and Public Access (Off-Highway Vehicles), and in Section 3.15, Transportation.

BLM maintains a searchable database (Legacy Rehost 2000 [LR2000]) for public title records[1] containing land status information, conveyances, mining claims, and withdrawals, including authorized and pending applications pertaining to a given geographic area. This database was reviewed to identify pending and authorized uses on the lands within and adjacent to the ROW area requested for the Project. It should be noted that valid existing rights can exist without an authorization or without being in the LR2000 database, so these searches may not be all-inclusive for all rights in the Project area. There may also be facilities without authorization on public land (trespass). Authorized and pending land uses and known land tenure actions in the vicinity of the Project site are identified in Table 3.9-1 and Table 3.9-2, respectively, and include ROWs and shared use of the SCE transmission corridor. Power transfer agreements are in place for Imperial Irrigation District, SCE, and Cabazon Wind, LLC, for shared use of the utility corridor through Sections 1 and 2. Existing road ROWs to access the

1 BLM's LR2000 is an online searchable database containing public reports on federal land and mineral use authorizations, conveyances, mining claims, land status information (case recordation, withdrawals, restrictions, etc.), rights-of-way, and other use authorizations.

corridor and the CRS are in place through these sections. Portions of Range 21 E, Sections 7 and 8, have pending solar development applications related to the gen-tie line location for the Desert Quartzite project (see Table 3.9-2). Section 8 includes donated lands.

Land uses authorized by the BLM, such as those listed in Table 3.9-1, have valid existing rights that could result in land use conflicts. Such rights attach when an ROW is granted; subsequent grants of ROWs would be issued subject to the rights of prior grants. Pending applications to the BLM submitted prior to the application for the Project, such as those listed in Table 3.9-2, also could result in land use conflicts, as could subsequent applications filed, land tenure actions taken, and authorizations issued for lands within and in proximity to the Project site.

**TABLE 3.9-1**
**AUTHORIZED LAND USES AND LAND TENURE ACTIONS WITHIN OR IN CLOSE PROXIMITY TO THE PROJECT SITE**

| Serial No. | Holder | Type of Use | Granted | Expiration | Distance from Project site |
|---|---|---|---|---|---|
| CACA 035027 | BLM California Desert DO | Donation of Lands to U.S. | 12-15-1995 | Undetermined | Within and adjacent to the northeast portion of Project site (near CRS) |
| CACA 050951 | BLM California SO | Withdrawn Lands- BLM Misc. | 6-27-2013 | Undetermined | Within, collocated with the Project site |
| CACA 004163 | Southern California Edison | Electrical energy-related ROW per FLPMA 501(a)(4) | 11-1-2012 | Indefinite | Approx. 1 mile north of Project site, collocated with access (Powerline Rd.) |
| CACA 044491 | Imperial Irrigation | Electrical energy-related ROW per FLPMA 501(a)(4) | 9-18-2007 | 9-18-2057 (50-year term) | Approx. 1 mile north of Project site, collocated with access (Powerline Rd.) |
| CACA 046331 | FPL Cabazon Wind LLC | Electrical energy-related ROW per FLPMA 501(a)(4) | 7-3-2007 | 7-3-2037 (30-year term) | Approx. 1 mile north of Project site, collocated with access (Powerline Rd.) |

NOTE: Data in this report was obtained from LR2000, Geographic Report with Customer; parameters – existing and pending cases, by MTRS based on legal description provided by the Applicant.

**TABLE 3.9-2**
**PENDING APPLICATIONS WITHIN OR IN CLOSE PROXIMITY TO THE PROJECT SITE**

| Serial No. | Applicant | Type of Use | Application Filed | Distance from Project Site |
|---|---|---|---|---|
| CACA 049397 | Desert Quartzite, LLC; First Solar, LLC [a] | Solar Energy Development ROW | 9-28-2007 | Collocated with Project Site north of CRS |
| CACA 051967 | Sonoran West Solar | Solar Energy Development ROW (this is the Project) | 5-12-2009 | n/a |
| CACA 053213 | Renewable Resources Group | Solar Energy Development ROW | 5-25-2011 | Approx. 0.5 miles north of the CRS |
| CACA 054658 | Southern California Edison | Road ROW | 5-30-2013 | Near CRS; collocated with Project site |

NOTE: The BLM issued a Record of Decision in January 2020 approving and authorizing the issuance of a ROW grant for the Desert Quartzite Solar Project. To date, a ROW grant has not yet been issued for this project.

## 3.9.3 Methodology

The Project's solar development grant application was received on May 12, 2009, and is currently listed as "pending" (BLM 2018). The analysis below considers whether the authorized and pending applications submitted prior to this application would result in land use conflicts, such as precluding physical development or limiting access to an existing or potential use, with the Project or an alternative. The analysis is based on foreseeable physical conflicts; the mere geographical collocation of authorized or pending ROW applications would not necessarily result in a land use conflict.

## 3.9.4 Direct and Indirect Effects

### 3.9.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

Alternative A, the Project, would include construction, operation, maintenance, and decommissioning of a 350-megawatt (MW) solar facility located on BLM-administered public lands. The Project would include interconnection to the regional electrical grid through SCE's CRS, and would include construction of additional access roads that are adjacent to but outside of the existing utility corridor. The Project would require BLM approval of a ROW grant and an amendment to the CDCA Plan to permit the use.

**Occupation of Land Area**

If constructed, the Project would occupy approximately 2,500 acres of undeveloped public lands for an estimated 30-year term of use. If the Project is developed on the site, the site cannot be used for other use opportunities that otherwise would be available on the public lands. As discussed in Section 3.12, Recreation and Public Access (Off-Highway Vehicles), the Project would affect use of the site for recreation and off-highway vehicle (OHV) use. The Project would not require the permanent closure of OHV routes; however, during construction and decommissioning, access to open route MM703 (Powerline Road) could be limited or require short-term closures due to construction activities. Following decommissioning, which is anticipated to occur following a 30-year term of use, the solar facilities would no longer occupy the land; therefore, the potential effects would be long-term but would not be permanent.

**Valid Existing Rights and Potential Conflicts**

As part of the ROW application process, the Applicant is required to address any potential conflicts with existing land uses prior to ROW grant approval. Grants are subject to the valid existing rights of others, including rights retained by the United States. As noted in Table 3.9-2, a pending solar development application for the Desert Quartzite project was submitted prior to the application for the Project. The BLM issued a Record of Decision in January 2020 approving and authorizing the issuance of a ROW grant for the Desert Quartzite Solar Project. However, to date, a ROW grant has not yet been issued for this project. If the requested ROW granted, that project would have valid existing rights within its ROW. A portion of the proposed Desert Quartzite ROW surrounding that project's proposed gen-tie line would be collocated with where the Project would place solar arrays. Potential conflicts could include tight spatial constraints involving clearance requirements for health and safety, access issues, and maintenance considerations for the respective facilities. However, based on project design refinements subsequent to the submittal of the Desert Quartzite application, the BLM anticipates that the final boundaries of the Desert Quartzite ROW would not conflict because its gen-tie line would be installed to the north within Sections 5 and 6 (BLM 2019). Other valid existing rights pertain to collocated transmission lines, which do not conflict with the Project, as the shared transmission lines would be managed to avoid capacity exceedances. In the event there are other applications in the Project area, the BLM retains the right to require common use of rights-of-way for compatible uses, including facilities and change grants to protect public health or safety or the environment.

Although no use restrictions are specified for the donated lands in Section 8, California State Policy for acquired lands requires BLM California State Director's review and approval for facilities proposed on these lands. The BLM retains the right to issue other compatible ROWs within the boundary of the Project site. Additionally, if subsequent ROWs are granted within the site for the proposed ROW, the BLM would be required to notify those with valid existing rights, per CFR 2807.14. Grant holders would have an opportunity to respond in writing as to how the Project would impact their existing operations/rights. The BLM would consider the potential effects prior to granting subsequent ROWs.

### 3.9.4.2 Alternative B: Alternative Design

Alternative B is defined by the implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.9-3) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.9-3 summarizes the change in lands and realty impacts under Alternative B, by Design Element.

**TABLE 3.9-3**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Lands and Realty | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

Alternative B would have approximately the same footprint as Alternative A; however, the Design Elements would result in a reduced area of grading, trenching, and other soil-disrupting activities under Alternative B as compared to Alternative A. Alternative B would have the same types of land use impacts as those that would occur under Alternative A, as the locations for the gen-tie line are the same under both scenarios. As with Alternative A, the only land use expected to be disrupted would be dispersed recreation and OHV use. These impacts are discussed in Section 3.12, Recreation and Public Access (Off-Highway Vehicles).

Impacts related to valid prior existing rights would be the same for Alternative B as for Alternative A. As with Alternative A, Alternative B could result in negligible and resolvable, localized conflicts associated with the overlapping ROW areas of the Project site and the proposed Desert Quartzite project. As with Alternative A, it is anticipated that either no conflict would occur or any conflict would be resolved through negotiated design modifications to provide for health and safety clearance, access, and maintenance requirements prior to granting a ROW under Alternative B. Therefore, potential effects would be negligible.

### 3.9.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would be the same as Alternative A, but would consist of a reduced footprint that would reduce ground disturbance within key areas containing sensitive vegetation, sand dune habitat, and cultural resources. Alternative C would have the same types of land use and ROW impacts as those that would occur under Alternative A. However, under Alternative C, the conflicts with respect to occupation of lands would be reduced in scale. As with the Project, the only land use expected to be disrupted would be dispersed recreation and OHV use. These impacts are discussed in Section 3.12, Recreation and Public Access (Off-Highway Vehicles).

Impacts related to valid, existing and pending rights would be the same under Alternative C as for Alternative A. As with Alternative A, Alternative C could result in negligible and resolvable localized conflicts associated with common use of areas for the proposed Desert Quartzite project facilities and the Project’s proposed structures. As with Alternative A, it is anticipated that either no conflict would occur or any conflict would be resolved through design modifications to provide for clearance requirements prior to granting a ROW under Alternative C. Therefore, potential effects would be negligible.

### 3.9.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, BLM would not authorize an ROW grant for the Project. Because the Project would not be approved and the CDCA Plan would not be amended, the BLM would continue to manage the land consistent with CDCA Plan, as amended by the Western Solar Plan and Desert Renewable Energy Conservation Plan (DRECP). The existing environmental setting described in Section 3.9.2 would be maintained. Existing land uses would continue uninterrupted. Therefore, Alternative D would not result in any land use impacts.

## 3.9.5 CEQA Significance Thresholds and Determinations

The Project would have a significant impact on land use and planning if it would:

a) Physically divide an established community.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

### 3.9.5.1 Alternative A: Proposed Action

**Impact 3.9.5a: Would the Project physically divide an established community? (*No impact*)**

#### Construction, Operation, and Decommissioning

The Project site is currently vacant and consists of undeveloped desert lands. The Project would include installation of exclusionary fencing around the perimeter of the approximately 2,500-acre site. However, the Project would not be located in an established community and would not result in the construction of any housing or permanent residences. The nearest established community is the town of Palo Verde, located approximately 10 miles southeast of the Project. There would be no impact pertaining to this criterion.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.9.5b: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (*Less than significant*)**

#### Construction, Operation and Decommissioning

The Project is subject to the CDCA Plan and amendments, with the exception of the DRECP. As described in Section 1.3.4, because the Project is listed as "Pending" in the Western Solar Plan and would be located within the solar energy zone, the Project is not subject to the requirements of the DRECP. To the extent feasible, however, the Project would be generally consistent with the CMAs provided in the DRECP. See Appendix F for the Project's resource-specific consistency analysis. Any significant impacts that may be associated with an inconsistency with DRECP CMAs are evaluated in full in resource-specific sections of the EIR. No other land use plans are applicable to the Project site. An evaluation of the conformance of the Project and alternatives with the specific elements of the CDCA Plan is presented in Appendix G. As shown in Appendix G, the Project and alternatives would fully comply with the CDCA Plan. The CDCA Plan would also be amended to identify the development footprint as suitable for the proposed type of solar energy use. The Project and alternatives would comply with all applicable BLM policies governing site management, including specific vegetation maintenance and management requirements identified in BLM's Vegetation Management Programmatic Environmental Impact Statement (PEIS). Impacts would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

### 3.9.5.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Land use impacts would be similar under Alternative B to those determined for Alternative A. Under Alternative B, the area of grading and soil disturbance would be reduced. However, this would have no bearing on existing land use plans. As with Alternative A, Alternative B is not proposed within an established community and would comply with all applicable BLM policies governing site management, including specific vegetation maintenance and management requirements identified in BLM's Vegetation Management PEIS. As with Alternative A, a CDCA Plan amendment would be required for Alternative B. Similar to Alternative A, to the extent feasible, Alternative B would be generally consistent with the CMAs provided in the DRECP. Any significant impacts that may be associated with an inconsistency with DRECP CMAs are evaluated in full in resource-specific sections of the EIR. See Appendix F for the Project's resource-specific consistency analysis. Impacts would be less than significant.

### 3.9.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Land use impacts would be similar under Alternative C to those determined for Alternative A. Under Alternative C, the overall acreage would be reduced. However, this would not change the analysis of impacts for land use considerations. As with Alternative A, Alternative C is not proposed in a location that could divide an established community and would comply with all applicable BLM policies governing site management. As with Alternative A, a CDCA Plan amendment would be required for Alternative C. Similar to Alternative A, to the extent feasible, Alternative C would be generally consistent with the CMAs provided in the DRECP. Any significant impacts that may be associated with an inconsistency with DRECP CMAs are evaluated in full in resource-specific sections of the EIR. See Appendix F for the Project's resource-specific consistency analysis. Impacts would be less than significant.

### 3.9.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, BLM would not authorize a ROW grant for the Project. Because the Project would not be approved and the CDCA Plan would not be amended, the BLM would continue to manage the land under its land use jurisdiction consistent with CDCA Plan, as it was amended by the Western Solar Plan and DRECP. The existing environmental setting described in Section 3.9.2 would be maintained. Existing land uses would continue uninterrupted. Therefore, Alternative D would not result in any land use impacts.

## 3.9.6 Cumulative Effects

### 3.9.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

Implementation of the Project and other past, present, and reasonably foreseeable future projects would preclude the development of certain other future uses on the Project site and could, thereby, affect land use opportunities on lands within the CDCA Plan area. Potential effects could include access conflicts, as described in Sections 3.12, *Recreation and Public Access* (Off-Highway Vehicles), and 3.15, *Transportation*. If the Project or an alternative is developed on the site, the site cannot be used for other current and future use opportunities that otherwise would be available.

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section Table 3.1-1. Among them, projects that also would be developed wholly or partially on lands formerly designated as MUC-M would similarly restrict recreational opportunities of the types considered appropriate and allowable within that CDCA Plan classification for the duration of those projects. These projects include Palen Solar, Genesis Solar, Desert Sunlight, Desert Harvest, and Desert Quartzite. The Project would occupy approximately 2,500 acres, and the other projects would occupy approximately 25,000 acres, for a total of approximately 27,500 acres. Of the total formerly designated MUC-M lands in eastern Riverside County, the Project represents less than 1 percent, with a total cumulative effect of approximately 8 percent. More than 350,000 acres of formerly designated MUC-M lands in eastern Riverside County would remain available for the types of uses that are available on such lands, and since other classes of lands can also support some of the same allowable uses, no substantial ongoing cumulative impact would result from the combination of the Project and the past, present, and reasonably foreseeable future projects. Further, upon completion of decommissioning, these lands would become available for other uses, pursuant to the land use plan in effect at the time of decommissioning. The Project is not located within a designated energy corridor and therefore would not contribute to any cumulative impact on existing energy corridors.

The Project would not physically divide an established community (Impact 3.9.6a) and would not conflict with any applicable land use plan or habitat conservation plan (Impact 3.9.6b), so it would not contribute to any cumulative impacts related to these topics.

### 3.9.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative B to cumulative land use impacts would be approximately the same as Alternative A, since Alternative B would consist the same footprint. Similar to Alternative A, Alternative B would occupy approximately 2,500 acres and the other projects in the cumulative scenario would occupy approximately 25,000 acres, for a total of approximately 27,500 acres. Of the total formerly designated MUC-M lands in eastern Riverside County, Alternative B represents less than 1 percent, with a total cumulative effect of approximately 8 percent. Therefore, for the same reasons described for Alternative A, no substantial ongoing cumulative impact would result from the combination of Alternative B and the past, present, and reasonably foreseeable future projects. Alternative B is not located within a designated energy corridor and therefore would not contribute to any cumulative impact on existing energy corridors.

### 3.9.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative C to cumulative land use impacts would be approximately the same as Alternative A. The Alternative C site is 2,040 acres and the other projects in the cumulative scenario would occupy more 25,000 acres, for a total of approximately 27,040 acres. Of the total formerly designated MUC-M lands in eastern Riverside County, Alternative C represents less than 1 percent, with a total cumulative effect of approximately 8 percent. Therefore, for the same reasons described for Alternative A, no substantial ongoing cumulative impact would result from the combination of Alternative C and the past, present, and reasonably foreseeable future projects. Alternative C is not located within a designated energy corridor and therefore would not contribute to any cumulative impact on existing energy corridors.

### 3.9.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no solar facilities would be constructed, operated or decommissioned; therefore, there would be no contribution to cumulative land use impacts. Because no effect on lands and realty would occur, no contribution to a cumulative impact would occur.

## 3.9.7 Residual Effects

Because no mitigation measures are recommended, residual impacts on lands and realty would be the same as discussed for the Project.

# 3.10 Noise

## 3.10.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning noise. The regulations applicable to this analysis are summarized in Appendix E.

This analysis is based (in part) on the RE Crimson Solar Project, Noise Analysis (AECOM 2019). A full copy of the report is provided in Appendix P.1.

### 3.10.1.1 General Information on Noise

Noise is defined as unwanted sound. The ambient sound level of a given location is composed of natural sources (e.g., birds, leaves) and human activities (e.g., landscape maintenance, vehicles, conversation), which vary with time of day, wind speed and direction, and activity. Sound is measured in decibels (dB), which are logarithmic units that compare the wide range of sound intensities to which the human ear is sensitive. Therefore, two or more sources will combine logarithmically, rather than linearly. For example, doubling a noise source would increase the noise level by 3 dB; e.g., two noise sources of 50 dB each would combine as 53 dB, not 100 dB.

#### *Noise Exposure and Community Noise*

Excessive noise exposure has been shown to cause interference with human activities at home, work, or recreation and can cause community annoyance and hearing loss, as well as affect people's psychological, sociological, physiological, and economic health and well-being. Potential human annoyance and health effects associated with noise may vary depending on factors, such as whether there is a perceptible change in ambient noise levels.

To assess noise impacts on noise-sensitive land uses, noise levels are weighted to reflect the human ear's reduced sensitivity to low frequencies (A-weighting, i.e., dBA), which correlates well with human perceptions of the annoying aspects of noise. A difference of 3 dBA is considered a barely perceptible change in environmental noise, while a 5 dBA difference is considered a readily perceptible increase. An increase of 10 dBA is perceived by people as a doubling of loudness, and almost certainly causes an adverse community response (Caltrans 2013a). It should be noted that although a difference in environmental noise of less than 3 dBA may not result in a perceptible increase in noise level, the individual sources of noise that combine to make the environmental noise tend to be distinguishable from one another.

The community noise environment and human activities cause noise levels to be widely variable over time. The maximum sound level ($L_{max}$) is the maximum instantaneous sound pressure level generated by a piece or group of equipment during a period; this single value for the loudest event is rarely indicative of noise conditions existing in the area. Sound levels are usually best represented by an equivalent noise level over a given time period ($L_{eq}$), or by an average level occurring over a 24-hour period, e.g., the day-night average sound level ($L_{dn}$) or the Community Noise Equivalent Level (CNEL), which include all of the time-varying sound levels of the time period. Since human sensitivity to noise increases during evening and nighttime hours, when people are typically sleeping, the $L_{dn}$ incorporates a 10 dBA penalty to noise levels at night (between 10:00 p.m. and 7:00 a.m.) and the CNEL incorporates an additional 5 dBA penalty to noise levels in the evening (between 7:00 p.m. and 10:00 p.m.).

Ambient noise levels are generally considered low below 45 dBA CNEL, moderate between 45 to 60 dBA CNEL, and high above 60 dBA CNEL. Remote wilderness areas can be below 35 dBA CNEL. Ambient noise levels in small towns or rural residential areas tend to be between 50 or 60 dBA CNEL, while levels in busy urban areas are around 75 dBA CNEL. Ambient noise levels near busy freeways and airports can average 85 dBA CNEL.

#### *Noise Attenuation*

Sound level naturally decreases (attenuates) with more distance from the source. Noise from point sources, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate at a rate of

6.0 dBA per doubling of distance from a source where the ground surface between a noise source and a receiver is reflective or hard, such as paved or hard soil, and attenuate at a rate of 7.5 dBA per doubling of distance from a source where the ground surface is absorptive or soft, such as soft dirt, or vegetated areas. Noise from line sources, such as vehicles traveling on a roadway, attenuate at a rate of approximately 3.0 dBA to 4.5 dBA for each doubling of distance between the source and the receiver for hard or soft surfaces, respectively.

### 3.10.1.2 General Information about Vibration

Vibration is an oscillatory motion through a solid medium where the motion's amplitude can be quantified as displacement, velocity, or acceleration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Peak particle velocity (PPV) is the maximum instantaneous vibration peak, expressed in inches per second (in/sec) and most frequently used to describe vibration impacts to buildings. Root mean square (RMS) amplitude is the average of the squared vibration amplitude, expressed as decibel notation (VdB). RMS is most frequently used to describe vibration effects on the human body.

## 3.10.2 Regional and Local Environmental Setting

The Project site consists of undeveloped desert lands. Surrounding land uses include I-10, Bureau of Land Management (BLM) lands (e.g., undeveloped, recreation, mineral development, conservation designation, access roads), private lands, renewable (solar and wind) energy development, and industrial/utility uses, including the Southern California Edison transmission corridor and the Colorado River Substation.

### 3.10.2.1 Sensitive Receptors

The Project site is not in the proximity of any noise-sensitive receptors (e.g., residences, schools, hospitals, day care centers, or long-term care facilities). The nearest sensitive receptors are approximately 2.9 miles west of the western Project boundary, associated with the Chuckawalla Valley and Ironwood State Prisons, and Wiley's Well Campground approximately 2.9 miles southwest of the southern Project boundary.

### 3.10.2.2 Ambient Noise Conditions

The primary existing noise source in the Project area is vehicle traffic on local roadways, including I-10, located approximately 1.6 miles north of the Project boundary. To characterize the ambient noise levels in the vicinity of the Project site, long-term (i.e., 24 hours) and short-term (i.e., 20 minutes) ambient noise measurements were conducted at the nearest sensitive receptor locations discussed above. The long-term measurements indicate $L_{dn}$, CNEL, daytime $L_{eq}$, and nighttime $L_{eq}$ levels of be 32 dBA, 33 dBA, 34 dBA, and 21 dBA, respectively, at the northern end of Wiley's Well Campground, and 47 dBA, 48 dBA, 45 dBA, and 40 dBA, respectively, at a location east of the state prisons. The short-term daytime and evening $L_{eq}$ levels at Wiley's Well Campground were measured to be 27 dBA and 24 dBA, respectively, and the daytime and evening $L_{eq}$ levels near the state prisons were measured to be 34 dBA and 38 dBA, respectively. For additional information about the noise measurement survey for the Project, including CNEL levels and a breakdown of daytime $L_{eq}$ for the long-term measurements, refer to the Appendix P.1, Noise Analysis.

## 3.10.3 Analytical Methodology

This analysis evaluates potential noise impacts of the Project and alternatives based on sensitive receptor locations, ambient noise levels, and projected noise levels that would be associated with construction, operation, maintenance, and decommissioning of the Project and alternatives. The following methods were used to estimate noise levels and evaluate impacts.

### 3.10.3.1 Project Construction and Decommissioning Noise Impacts

Project construction noise was estimated for each construction phase by considering the quantities of contributing noise sources and calculating their aggregate noise attenuation to the nearest sensitive receptor locations. For a given construction activity, all pieces of equipment and vehicles are assumed to operate—on average—from the same source point location at the general geographic centroid of the Project site. Each piece of equipment or vehicle was assigned a reference maximum noise level ($L_{max}$) at a reference distance of 50 feet, and a usage factor percentage of a construction operation time period when the $L_{max}$ value can be expected to occur (FHWA 2006). The estimated aggregate noise level from concurrent construction activities was predicted for each of two representative noise-sensitive receptors, then logarithmically added to the baseline ambient sound level for comparison with the baseline ambient sound level. For a conservative evaluation, this analysis assumes that a noise level difference between construction noise and the baseline conditions at a sensitive receptor location would be considered a substantial temporary increase in ambient noise levels if greater than 10 dBA $L_{eq}$, which would be perceived at least as a doubling of loudness (Caltrans 2013a).

### 3.10.3.2 Project Construction Traffic Noise Impacts

Construction traffic noise on Wiley's Well Road and the Colorado River Substation access road was modeled using the Federal Highway Administration (FHWA) Traffic Noise Model, Version 2.5 (TNM 2.5). Peak-hour $L_{eq}$ was predicted using the estimates of employee vehicles and delivery trucks that would enter and exit the Project site on a daily basis. The technical noise analysis prepared for the Project (AECOM 2019) incorporated trips only associated with Phase 2 for the maximum traffic noise modeling; however, Phases 1 through 3 would mostly occur concurrently. In addition, subsequent to the preparation of the technical noise analysis, the applicant substantially increased the estimated amount of required water truck trips. Therefore, the construction traffic noise modeling analysis for the Project was revised to incorporate vehicle trips associated with Phases 1, 2, and 3, as well as to incorporate the revised water truck trip amounts (ESA 2019).

For the peak-hour predictions, this analysis assumed that a maximum of 941 employees associated with all three construction phases would arrive within a single hour (7:00 a.m. to 8:00 a.m.). For a conservative analysis it is assumed that each of the employees would commute to the site in their personal vehicles; therefore, a total of 941 standard automobiles were modeled on the roadways. Twenty-six medium trucks (water trucks) and 24 heavy trucks (equipment and material deliveries) were also modeled as entering the site during this 1-hour period.

### 3.10.3.3 Vibration Impacts

Vibration levels generated by pile-driving activities were predicted using the Federal Transit Administration (FTA) reference level of 1.518 in/sec at 25 feet (FTA 2006). The California Department of Transportation (Caltrans) vibration manual (Caltrans 2013b) provides an equation for pile-driving vibration level prediction at a receiver location, which provides for the assessment of compliance with structural damage thresholds and human receptor annoyance levels at any given receptor distance.

### 3.10.3.4 Operation and Maintenance Noise Impacts

Project daytime and nighttime operation noise was estimated for noise-sensitive receptor locations using the CadnaA® Noise Prediction Model, Versions 2017 and 2019, which assesses operational noise levels resulting from a variety of mobile and stationary noise sources. The Project and Alternative B were modeled to include 144 2.5-MW and 90 4.5-MW transformer units, respectively, evenly spread about the block layout areas, with approximately 720 inverter units each. Although both alternatives propose up to 700 inverters in two capacities, the available inverter sound level references used in this analysis were for a 500 kV unit; thus, 720 inverters were deemed necessary to reach the total specified Project MW capacity. Substation operation noise was also modelled for the Project and Alternative B. Given the relatively low amount of maximum daily operation and maintenance-related trips and the long distance from the Project access route to the nearest sensitive receptors, traffic noise during the operation phase would be negligible at the closest sensitive receptor locations.

A permanent increase in ambient sound level at a sensitive receiver of greater than 5 dBA CNEL could be considered substantial in some cases and thus would result in a significant impact, depending on factors such as the resulting noise level, duration and frequency of noise, the number of people affected, and the land use of the affected receptor sites. The significance criteria are consistent with the California Energy Commission's interpretation of noise impact threshold criteria (AECOM 2019).

# 3.10.4 Direct and Indirect Effects

## 3.10.4.1 Alternative A: Proposed Action

### *Construction, Operation, and Decommissioning*

Construction noise, generated from construction equipment at the Project site and from construction vehicle traffic traveling to and from the Project site, would occur for a duration of approximately two years primarily Monday through Friday between the hours of 7:00 a.m. to 7:00 p.m. and would fluctuate widely at sensitive receptor locations depending on the construction activity, equipment type and number, and distance between noise sources and sensitive receptor locations. Many of the proposed construction activities would result in noise levels that would attenuate to below existing ambient noise levels at the nearest sensitive receptor locations. For all modeled construction phases and meteorological conditions, the predicted construction noise levels would not exceed 35 dBA $L_{eq}$ at the receptor locations. Construction noise levels combined with existing daytime ambient noise levels, compared to existing daytime ambient noise levels, confirm that the temporary construction noise levels would not increase existing ambient levels by more than 10 dBA in any construction phase or meteorological scenario combination.

Construction traffic from commuting construction personnel and truck deliveries of construction materials and equipment would cause a notable increase in traffic volumes on Wiley's Well Road and Powerline Road, near the Chuckawalla Valley State Prison. Wiley's Well Campground was omitted from this specific analysis because it is located approximately 6.5 miles from the modeled roadway and, thus, construction traffic noise exposure at this distance would be minimal. Wiley's Well Road is used primarily for employee and visitor access to Chuckawalla Valley and Ironwood State Prisons, and is sparingly used throughout the day by recreational vehicles south of the entry driveway for the prisons. The nearest segment of Wiley's Well Road that would be used during Project construction is approximately 10,000 feet from the Chuckawalla Valley State Prison. Baseline noise measurement Location 2 (LT2) (see Appendix P.1 for location of LT2) along Wiley's Well Road is south of the entry driveway for the prisons; thus, LT2 is not strongly affected by existing traffic noise associated with the Chuckawalla Valley State Prison. The daytime $L_{eq}$ noise level calculated for noise measurement location LT2 is considered to be a conservative estimate of noise levels that would be experienced at the prison on a typical day. The Chuckawalla Valley State Prison and the nearest segment of Wiley's Well Road that would be used during Project construction are 10,000 feet apart. At that distance, the predicted construction traffic noise level at the Chuckawalla Valley State Prison is 29 dBA $L_{eq}$ for the peak-hour construction traffic, which when added to the measured existing noise levels at LT2 of 45 dBA $L_{eq}$ (i.e., logarithmic decibel addition), would not result in an increase in ambient noise (ESA 2019).

The Project would result in long-term sources of daytime and nighttime noise at the Project site from the operation and maintenance of the proposed solar power plant equipment and substation. There would also be off-site noise sources, such as commuting workers and delivery trips. The predicted noise levels from operations at the closest sensitive receptors would attenuate with distance (approximately 2.9 miles) during the daytime to approximately 0 to 6 dBA $L_{eq}$, compared with measured existing baseline daytime ambient noise levels of 34 dBA $L_{eq}$ at Receiver 1, and 45 dBA $L_{eq}$ at Receiver 2. This result demonstrates that Project operation noise would be expected to be substantially quieter than the existing ambient sound levels at both receivers, which when combined results in an ambient daytime increase of 0 dBA $L_{eq}$ (AECOM 2019). During the nighttime, the predicted operation noise levels would attenuate to approximately 3 to 15 dBA $L_{eq}$ at Receiver 1 and approximately 12 to 22 dBA $L_{eq}$ at Receiver 2, which, when combined with measured existing baseline nighttime ambient noise levels of 21 dBA $L_{eq}$ at Receiver 1 and 40 dBA $L_{eq}$ at Receiver 2, would result in an ambient increase of up to 1 dBA $L_{eq}$ (AECOM 2019).

During operations, Project-related traffic would include vehicle trips associated with up to 40 panel washer contractors and 10 full time employees during quarterly panel washing periods that would each last for several weeks. The operation-based traffic would result in substantially less traffic noise in the vicinity of the prison than Project construction traffic noise, which is estimated to generate a noise level of 29 dBA $L_{eq}$ that would not increase existing ambient noise levels. Similarly, the negligible operational traffic noise would not result in an ambient increase in noise levels (AECOM 2019).

Decommissioning impacts are anticipated to be similar to those determined for the construction phase of the Project, depending upon the proposed decommissioning action and final use of the site.

#### *Vibration*

Temporary sources of groundborne vibration and noise during construction and decommissioning would result from operation of heavy construction equipment. Pile-driving would produce the highest levels of vibration. The maximum distance within which potential structure-specific damage from pile-driving may occur is approximately 69 feet, and potential human annoyance may occur at 300 feet. There are no sensitive receptors within these distances from proposed pile-driving locations. Therefore, construction and decommissioning would cause no adverse vibration-related effects.

Operation and maintenance of the Project would not introduce any new sources of perceivable groundborne vibration to the study area. Consequently, the Project would cause no operation- or maintenance-related effects associated with groundborne vibration.

### 3.10.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.10-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.10-1 summarizes the change in noise impacts under Alternative B, by Design Element.

**TABLE 3.10-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Noise | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, Decommissioning*

Incorporation of the Design Elements under Alternative B is not expected to materially alter the construction schedule or workforce. DE-1 would create the same noise as Alternative A, although possibly for a slightly shorter duration during the site preparation activities. The noise produced if DE-3 were implemented would also be very similar to Alternative A. Less grading and trenching would occur if DE-2 were implemented than would occur under Alternative A, but the installation up to 1,000 wooden poles would generate similar noise levels as the grading and trenching activities that DE-2 would eliminate. Because the location and the distance from existing sensitive receptors is the same for all the action alternatives, the direct and indirect noise effects identified for Alternative A (construction, operation, maintenance, and decommissioning) would also apply to Alternative B.

### 3.10.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, Decommissioning*

The construction season, work force, and equipment requirements for Alternative C would be the same as for Alternative A. Therefore, the noise estimates during construction and decommissioning would also be the same as for Alternative A. Alternative C is located at the same site as Alternative A and would involve the same number of full-time employees and maintenance activities. Therefore, all direct and indirect noise effects identified for Alternative A (construction, operation, maintenance, and decommissioning) also apply for Alternative C.

### 3.10.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no Project development would occur, and the existing environmental setting would be maintained. The No Plan Amendment/No Action/No Project Alternative would result in no changes to existing ambient noise levels; therefore, no impact would occur.

## 3.10.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on risks associated with Noise if it would:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Generation of excessive groundborne vibration or groundborne noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels.

### 3.10.5.1 Alternative A: Proposed Action

**Impact 3.10.7a: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies? (*Less than significant*)**

#### Construction, Operation, Decommissioning

The proposed Project is wholly located on BLM-administered land. There are no applicable California Desert Conservation Area Plan policies or other BLM/federal standards with respect to temporary or permanent increases in ambient noise levels. The temporary increase in ambient noise levels generated by the Project during construction, operation, maintenance, and decommissioning would result in an increase of less than 3 dBA above existing levels at the nearest sensitive receptor (see Section 3.10.6). A difference of 3 dBA is considered a barely perceptible change in environmental noise, while a 5 dBA difference is considered to be readily perceptible (Caltrans 2013a). The Riverside County Noise Ordinance is not applicable to the Project but is considered herein for analytical purposes. The Project would not conflict with the Riverside County ordinance for the daytime and nighttime construction noise limit of 45 dBA $L_{max}$, which only applies when the distance between the Project source and the nearest receptor is less than one-quarter of a mile away from the nearest inhabited dwelling. Project construction activities would occur, at the closest boundaries, approximately 2.9 miles from the nearest noise-sensitive receptor. Therefore, impacts from Project construction and decommissioning could be considered less than significant.

The Riverside General Plan also is also not applicable to the Project, but can be considered for analytical purposes. The General Plan thresholds for stationary and facility-related noise levels are 65 $L_{eq}$ (10 minutes) during the daytime, and 45 $L_{eq}$ (10 minutes) during the night. The County Ordinance Rural Residential maximum noise level threshold is 45 dBA $L_{max}$. Noise generated by the Project during operations would result in a significant impact if the Project generated a substantial permanent increase in ambient noise levels exceeding these limits. The predicted Project operation noise levels, under the various meteorological conditions, would be up to 22 dBA $L_{eq}$, which is well below the County's General Plan thresholds and the County's Rural Residential threshold. Therefore, impacts from Project operation can be considered less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.10.7b: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels? (*Less than significant*)**

#### Construction, Operation, Decommissioning

Groundborne vibration generated by Project construction activities, such as the pile-driving of the solar panel supports, has the greatest potential to affect inhabited structures within 300 feet of the activity compared to any vibration that would be generated during the operation and decommissioning phases. The effect decreases with distance from the source. The nearest inhabited structures are approximately 2.9 miles (15,200 feet) away from the Project site. Vibration effects from construction, operation, and decommissioning would not be perceptible at this distance. Therefore, impacts would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.10.7c: For a project located within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels. (*No impact*)**

#### Construction, Operation, Decommissioning

The Project site is not located within the vicinity of a private airstrip or an airport land use plan, or within 2 miles of a public airport or public use airport. The nearest airport to the Project site is the Blythe Airport, located approximately 6 miles northeast of the Project site. The Project site is located outside of the Noise Compatibility Contours of the Riverside County Airport Land Use Compatibility Plan (Riverside County 2004). Therefore, there would be no impact.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

## 3.10.5.2 Alternative B: Alternative Design

### *Construction, Operation, Decommissioning*

Impacts would be the same as identified for Alternative A.

## 3.10.5.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, Decommissioning*

Impacts would be the same as identified for Alternative A.

### 3.10.5.4 Alternative D: No Plan Amendment/No Action/No Project

#### *Construction, Operation, Decommissioning*

If Alternative D was implemented, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would result in no changes to existing ambient noise levels; therefore, no impact would occur.

## 3.10.6 Cumulative Effects

### 3.10.6.1 Alternative A: Proposed Action

#### *Construction, Operation, Decommissioning*

As described in Section 3.1, multiple projects are proposed or operating in the Project area. However, due to the localized nature of the construction and operational noise impacts, any potential cumulative noise impacts from construction or operations would be largely limited to areas within 1 mile of the Project site. As shown in Table 3.1-1, Cumulative Projects List, there are no past, present, or reasonably foreseeable projects within 1 mile of the Project site. Therefore, the noise effects of the Project would not combine cumulatively with other projects in the area, and the Project construction and operations would not cause or contribute to a substantial cumulative effect. It is anticipated that decommissioning of the Project or any of the action alternatives would result in substantially the same cumulative impacts as those associated with construction, and likewise would not result in cumulative impacts.

### 3.10.6.2 Alternative B: Alternative Design

#### *Construction, Operation, Decommissioning*

All of the cumulative effects identified for Alternative A (construction, operation, maintenance, and decommissioning) also apply to Alternative B. Therefore, Alternative B would not result in a cumulatively considerable contribution to cumulative noise impacts and would not cause or contribute to a substantial cumulative effect.

### 3.10.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, Decommissioning*

All of the cumulative effects identified for Alternative A (construction, operation, maintenance, and decommissioning) also apply to Alternative C. Therefore, Alternative C would not result in a cumulatively considerable contribution to cumulative noise impacts and would not cause or contribute to a substantial cumulative effect.

### 3.10.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

#### *Construction, Operation, Decommissioning*

If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. As a no-development alternative, Alternative D would result in no changes to existing ambient noise levels. Therefore, Alternative D would not result in a cumulatively considerable contribution to cumulative noise impacts and would not cause or contribute to a substantial cumulative effect.

## 3.10.7 Residual Effects

Because no mitigation measures are required, residual impacts would be as described for the Project.

# 3.11 Paleontological Resources

## 3.11.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning paleontological resources. The regulations applicable to this analysis are summarized in Appendix E.

Paleontological resources, or fossils, are the remains of extinct organisms, and provide the only direct evidence of ancient life. They are considered to be nonrenewable resources because they cannot be replaced once they are destroyed. As defined by the Bureau of Land Management (BLM), significant paleontological resources are "any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils" (BLM 2008: 18). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. The Society of Vertebrate Paleontology (SVP) defines fossil resources as being older than 5,000 years in age (SVP 2010). Fossils may be present within surface deposits within middle Holocene or older rocks, or may be buried in the subsurface profile. Therefore, the study area for paleontological resources is defined as all areas of land disturbance from Project construction, operation, maintenance, and decommissioning.

The analysis presented in this section is based in part on a paleontological resources assessment undertaken for the study area (AECOM 2018). The Paleontological Analysis is provided in Appendix Q.1. Paleontological sensitivity was assessed using the BLM's Paleontological Fossil Yield Classification System (PFYC), which ranges from Class 1 – Very Low to Class 5 – Very High (BLM 2016).

## 3.11.2 Regional and Local Environmental Setting

The Project site is located in the Colorado Desert physiographic province in an area approximately 15 miles west of the Colorado River in southeastern California, with parcels on the northern and western sides of the Mule Mountains. The Project site is situated on the eastern end of the Chuckwalla Valley and the western edge of the Palo Verde Mesa, which lies above the northern and western side of the current Colorado River Valley. The geology of the Project site is dominated by mountains, alluvial fans, and basins as is typical of the Mojave and Colorado deserts. Geologic mapping by Stone (Stone 2006) indicates the majority of the Project site is covered by Holocene (<11,700 years ago) alluvial fan and valley surficial deposits (Qa6), with some deposits of Holocene and Pleistocene (~2.58 million years ago [mya] - 11,700 years ago) alluvial fan deposits (Qa3) present at the eastern edge of the Project site and Pleistocene or Pliocene (~5.33 mya - 2.58 mya) Mule Mountain alluvial deposit (QTmm) present along the northern and northwestern sides of the Mule Mountains, but rarely extending into the Project area, and modern wash deposits (Qw) present along drainages. Eolian sand deposits (Qs), which occur only in a small area, are characterized as unconsolidated sands that form sheets or dunes. Specimens of petrified wood also occur within the Project site. Key geologic units, and their paleontological sensitivity, are discussed below.

**Holocene alluvial fan and valley surficial deposits (Qa6).** This unit makes up the surficial geology of the majority of the Project site and consists of sand to sandy gravel, coarsening toward the Mule Mountains, with no desert varnish (Stone 2006). Stone used the absence of varnish as justification of a Holocene age for this unit (Stone 2006); however, the results of the AECOM Paleontological Analysis (AECOM 2018) establish that this unit ranges up to the Pleistocene in age, as determined by radiocarbon dates of tortoise eggshell, abundant fossil remains, and the presence of paleosols. As established by the discovery of close to 1,000 fossil sites in this unit across the Project site during the field survey (AECOM 2018), this unit has BLM PFYC Class 4 – High paleontological sensitivity.

**Holocene and Pleistocene alluvial fan deposits (Qa3).** This unit is present in a small portion of in the eastern area of the Project site, and consists of alluvial deposits with smooth varnished desert pavement (Stone 2006). A field survey (AECOM 2018) noted the presence of paleosols in the shallow subsurface, and established a minimum age of around 20,000 years for this unit in the Project site. The survey found numerous fossil specimens in this unit in the Project area (AECOM 2018), thus it is assigned BLM PFYC Class 4 – High paleontological sensitivity.

**Mule Mountain alluvial deposit (QTmm).** Along the northern and northwestern sides of the Mule Mountains are deposits that Stone (Stone 2006) describes as a Pleistocene or Pliocene Mule Mountain alluvial deposit (QTmm) made of sand or pebbly sand that is weakly to moderately indurated with lenses of coarser deposits consisting of locally derived gravels. This unit does not generally extend into the Project site and is present only in one small portion in the northern area of the Project site. The field study also identified extensive paleosols developed on angular clastic sediments (AECOM 2018). Fossils were less abundant than in the other units within the Project site, but were significant (AECOM 2018). Therefore, this unit is assigned BLM PFYC Class 4 – High paleontological sensitivity.

**Holocene wash deposits (Qw).** This unit consists of unconsolidated, angular to subangular gravel and sand, coarsening toward the mountains, where cobbles and boulders are more prevalent (Stone 2006). This unit is found along desert washes in several locations across the Project site (AECOM 2018). Because of the young age of these deposits, as well as the absence of in situ fossil resources noted during the field survey (AECOM 2018), this unit is assigned BLM PFYC Class 2 – Low paleontological sensitivity. It should be noted that this unit may overlie older, high-sensitivity sediments, and therefore ground-disturbing activities in areas mapped as Qw may impact fossil resources if they extend beyond the depth of the surficial sediments.

## 3.11.3 Analytical Methodology

This section presents the analysis of potential direct, indirect, and cumulative impacts of the Project and alternatives on paleontological resources, including the potential for impacts on both known and undiscovered resources. Mitigation measures to avoid or reduce potential impacts are identified, as applicable.

This section is based on a paleontological resources assessment that consisted of: (1) a records search from the Natural History Museum of Los Angeles County, (2) a review of the relevant scientific literature, and (3) a field survey of the Project site, as detailed in the Paleontological Analysis Report (AECOM 2018).

## 3.11.4 Direct and Indirect Effects

### 3.11.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

Initial stages of construction for the Project would involve earthwork activities that could expose or destroy fossil resources, which would constitute an adverse effect under the National Environmental Policy Act (NEPA). As noted previously, the Project site consists of high sensitivity sediments (BLM PFYC Class 4) (AECOM 2018). Field surveys identified 957 fossil localities, of which 548 may preserve significant fossils in need of collection (AECOM 2018). Fossil taxa represented at these localities include anurans (frogs and toads), tortoise bones and eggshells, lizard, snake, possible bird, large and small leporids (rabbits and hares), rodents (rats and mice), artiodactyls (e.g., camels and sheep), and equids (horse) (AECOM 2018). A number of these localities were identified as microsites where extremely dense concentrations of vertebrate microfossils (very small remains such as rodent teeth) are found that can provide valuable data about the paleoecology of the area (AECOM 2018). The Project site thus represents what may be the third most abundant terrestrial Pleistocene fossil assemblage[1] in California, after the Rancho La Brea Tar Pits in Los Angeles and the Diamond Valley Lake deposits near Hemet, California (AECOM 2018).

Fossils identified during the survey were not collected at that time, and it is assumed that they have not been collected to date. Potentially significant impacts could occur if identified fossils are not collected (along with any other significant fossil localities that have been exposed since the survey) before any ground-disturbing

[1] Specimens of petrified wood have also been observed within the Project site, but since there are no specific regulations or policies protecting such resources, impacts to them are not considered significant.

activities are initiated at the site, including grubbing and geotechnical assessment. Mitigation Measures PALEO-1 through PALEO-5 would require implementation of a Paleontological Resource Monitoring and Mitigation Plan, preconstruction resource collection, implementation of a Worker Environmental Awareness Program (WEAP), construction measures as defined in the Paleontological Resource Monitoring and Mitigation, and implementation of a Paleontological Resources Monitoring Report (see Appendix B for further details). Implementation of these mitigation measures would ensure that fossils are not adversely impacted. With the implementation of Mitigation Measures PALEO-1 through PALEO-5, there would not be any adverse effects to paleontological resources.

Project operations are not anticipated to involve further ground disturbance above and beyond that occurring during construction, and so would not constitute adverse effects to paleontological resources.

During decommissioning of solar modules, the gen-tie line and all other Project components would be dismantled and removed from the site. The Project would include a Decommissioning Plan that would employ geotechnically appropriate removal methods that would minimize erosion and other geologic concerns. However, because removal of Project components could involve ground disturbance that extends beyond the original construction limits, there is a potential for adverse effects related to decommissioning.

## 3.11.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.11-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.11-1 summarizes the change in effects on paleontological resources under Alternative B, by Design Element.

**TABLE 3.11-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Paleontological | Minor reduction | Minor reduction | Minor reduction |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Construction, Operations, and Decommissioning*

Alternative B would generally result in similar impacts on paleontological resources as described for Alternative A, and the improvements proposed under Alternative B would require the implementation of mitigation measures PALEO-1 through PALEO-5, the same as for Alternative A, to avoid adverse effects on paleontological resources in the Project site. The depth of the ground disturbance associated with DE-1, DE-2, and DE-3 would be shallower compared to Alternative A. As such, it would have less potential to impact buried paleontological resources and would require less effort associated with monitoring and fossil collection prior to construction. Likewise, the impacts associated with decommissioning under Alternative B would be similar but slightly reduced compared to Alternative A because of the reduced depth of disturbance. The impacts of operations and maintenance under Alternative B would be the same as for Alternative A.

## 3.11.4.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

Alternative C would generally result in similar impacts on paleontological resources as determined for Alternative A; however, these impacts would occur in a smaller geographic area. Mitigation Measures PALEO-1 through PALEO-5 would be implemented similarly for Alternative C to avoid adverse effects to paleontological resources in the Project site, but would be slightly reduced in scale and effort when compared to Alternative A.

The impacts on paleontological resources under Alternative C during operations and maintenance would be the same as for Alternative A. The impacts associated with decommissioning under Alternative C would be the same as for Alternative A, but over a smaller area.

### 3.11.4.4 Alternative D: No Plan Amendment/No Action/No Project

Under this alternative, none of the components proposed under the Project would be built. If Alternative D were implemented, there would be no changes to onsite conditions, and the existing environmental setting would be maintained. Under this alternative there would be no potential for adverse effects to paleontological resources.

## 3.11.5 CEQA Significance Thresholds and Determinations

Based on the California Environmental Quality Act (CEQA) Guidelines Appendix G, a project would have a significant impact on Paleontological Resources if it would:

a) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

### 3.11.5.1 Alternative A: Proposed Action

**Impact 3.11.5a: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (*Less than significant with mitigation incorporated*)**

#### Construction, Operation, and Decommissioning

As discussed above (Section 3.11.4), field surveys have established that the Project site consists of high-sensitivity sediments (BLM PFYC Class 4) with numerous abundant fossil localities (AECOM 2018). The destruction or loss of the significant fossils present at these sites, or other sites that may be undiscovered in the subsurface of the Project site, would constitute a significant impact under CEQA. To reduce this impact to less than significant, Mitigation Measures PALEO-1 through PALEO-5 would be implemented. In particular, these mitigation measures would require implementation of a Paleontological Resource Monitoring and Mitigation Plan, a preconstruction resource collection, implementation of a WEAP, construction measures as defined in the Paleontological Resource Monitoring and Mitigation, and implementation of a Paleontological Resources Monitoring Report (see Appendix B for further details). Implementation of these mitigation measures would ensure that fossils are not adversely impacted.

#### Mitigation Measures

Implementation of Mitigation Measures PALEO-1 through PALEO-5.

#### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measures PALEO-1 through PALEO-5.

### 3.11.5.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Although Alternative B would result in shallower ground disturbance than Alternative A, the construction methods and operation activities would be largely the same as in Alternative A. Therefore, impacts associated with each phase of Alternative B (construction, operation, maintenance, and decommissioning) would be similar to those described above for Alternative A, and would be similarly reduced to less than significant with the implementation of mitigation.

### 3.11.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Although Alternative C would result in reduced ground disturbance when compared to Alternative A, the construction and operation activities would remain the same as in Alternative A. Therefore, impacts associated with each phase of Alternative C (construction, operation, maintenance, and decommissioning) would be similar to those described above for Alternative A, and would be similarly reduced to less than significant with the implementation of the mitigation.

### 3.11.5.4 Alternative D: No Plan Amendment/No Action/No Project

Under this alternative, none of the components proposed under the Project would be built. If Alternative D were implemented, there would be no changes to on-site conditions, and the existing environmental setting would be maintained. Under this alternative there would be no potential for adverse effects to paleontological resources.

## 3.11.6 Cumulative Effects

### 3.11.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The geographic scope for the cumulative impact analysis includes all areas of the Chuckwalla Valley underlain by the same geologic units as the Project site (see Section 3.11.2; in particular, the Holocene alluvial fan and valley surficial deposits that make up the surficial geology of the majority of the Project site and have a BLM PFYC of Class 4 – High paleontological sensitivity) or other geologic units with high or very high paleontological sensitivity. A significant cumulative impact would occur if the impacts of multiple projects combined to result in the loss of paleontological resources that could provide information about ancient life in the Chuckwalla Valley. All of the solar projects identified in Table 3.1-1 would be constructed on relatively undisturbed land with high potential for paleontological resources. In particular, the Desert Quartzite Solar Project is a proposed 3,800-acre solar plant located just to the east of the proposed Project, primarily on Holocene alluvium, Pleistocene alluvium, and dry desert wash deposits connected to or similar to those underlying the Project (Qa6, Qa3, Qw, and Qpv – alluvial deposits of Palo Verde Mesa, which has a PFYC of Class 5a – Very High), and like the Project would have a high potential to expose or destroy fossil resources, though no field survey for such resources has been undertaken for that Project to date (BLM 2018). The large amount of ground disturbance proposed in this region is likely to result in some loss of fossil resources, particularly if ground disturbing projects do not implement mitigation measures to avoid or minimize impacts. This would result in a significant cumulative impact.

Ground disturbance associated with the Project, if not properly mitigated, could expose or destroy significant paleontological resources. The potential impact on paleontological resources includes the loss of non-recoverable and nonrenewable significant fossils and associated scientific data, which would result in a cumulatively considerable contribution to the regional significant cumulative impact. However, implementing Mitigation Measures PALEO-1 through PALEO-5 would ensure that the Project would avoid and minimize impacts on paleontological resources to the maximum extent feasible. Further, because Project-specific surveys have identified specific locations of significant fossil assemblages, the implementation of these measures would be informed by robust site-specific data to best avoid the destruction of important fossils. Thus, with mitigation, the Project would not have a cumulatively considerable contribution to the significant cumulative impact.

### 3.11.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative B to cumulative impacts on paleontological resources would be the same as Alternative A. With the implementation of Mitigation Measures PALEO-1 through PALEO-5, Alternative B would not cumulatively contribute to adverse effects of other projects on paleontological resources under NEPA, nor contribute cumulatively to significant paleontological resource impacts under CEQA with the incorporation of Project mitigation measures.

### 3.11.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative C to cumulative impacts on paleontological resources would be the same as Alternative A. With the implementation of Mitigation Measures PALEO-1 through PALEO-5, Alternative C would not cumulatively contribute to adverse effects of other project on paleontological resources under NEPA, nor contribute cumulatively to significant paleontological resource impacts under CEQA.

### 3.11.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, the Project would not be constructed and public lands in the Project area would continue to be managed by BLM in accordance with existing land use practices. If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained by BLM. Therefore, Alternative D would not contribute to cumulative impacts to paleontological resources.

## 3.11.7 Residual Effects

Once ground disturbance has been completed at the site during construction, there is no longer a risk to paleontological resources, and therefore no residual impacts would occur after mitigation is complete.

# 3.12 Recreation and Public Access (Off-Highway Vehicles)

## 3.12.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning recreation and public access (off-highway vehicles or OHVs). The regulations applicable to this analysis are summarized in Appendix E.

## 3.12.2 Regional and Local Environmental Setting

### 3.12.2.1 Recreational Resources on the Project Site

The site is designated in the California Desert Conservation Area (CDCA) for Multiple-Use Class (MUC) M, or Moderate Use, and is considered suitable for recreation activities that generally involve moderate to high user densities (BLM 1980). Potential uses of the Project site including hiking and backpacking, primitive unimproved site camping, bicycling, horseback riding, rock hounding, nature study and observation, photography and painting, and hunting. A portion of the Project site overlaps a "popular rock hounding area" as mapped in the Northern and Eastern Colorado (NECO) Plan (BLM 2019b). Stopping, parking, and vehicle camping are allowed within 300 feet of a route, such as Powerline Road on the northeast side of the Project site (BLM 2002). Recreation use of public lands in and near the Project site is generally limited to the cooler months of September through May. Use is nearly non-existent during the summer months. Some camping may occur, but most use is of short duration by local residents (BLM 2019b). More attractive recreation opportunities occur in areas where BLM has provided amenities, such as those described below.

### 3.12.2.2 Recreational Resources in the Vicinity of the Project Site

The Project site is located in the eastern portion of the Chuckwalla Valley within the greater Palo Verde Valley. The Palo Verde Valley offers multiple outdoor recreational opportunities for boating, water skiing, jet skiing, swimming, fishing, canoeing, camping, rock hounding, hiking, mountain and trail biking, archery, hunting, horseback riding, trapping, trap and skeet shooting, and OHV use. Recreational vehicle use, including OHV use, is discussed below in Section 3.12.2.3.

#### *BLM-Administered Recreational Resources*

The BLM administers wilderness areas, long-term visitor areas (LTVAs), and other recreational opportunities in the vicinity of the site. Designated BLM-administered recreational resources within the Project vicinity are identified in Table 3.12-1. In addition, recreational use is allowed and occurs within most BLM-administered open space lands, including the Areas of Environmental Concern (ACECs) discussed in Section 3.14, *Special Designations*. The BLM's Recreation Management Information System (RMIS) shows that for Fiscal Year 2018 there were 300,694 visits and 354,710 visitor-days[1] for the Eastern Riverside County Area, which extends from Palm Springs to the Colorado River and includes the Project site (BLM 2019b).

##### Wilderness Areas

The Wilderness Areas nearest to the Project site are shown in Figure 3.14-1 and described in Section 3.14, *Special Designations*. As indicated in Table 3.12-1, five wilderness areas are located in the vicinity of the site: Palo Verde Mountains, Little Chuckwalla Mountains, Palen/McCoy, Big Maria Mountains, and Chuckwalla Mountains. These wilderness areas have no developed trails, parking/trailheads, or other visitor use facilities; therefore, visitor use within these areas is estimated to be very light (BLM 2019b).

[1] A "visitor-day" describes not only the fact that a person visited, but also the duration of time spent. In Fiscal Year 2018, the average visitor to the Eastern Riverside Dispersed Recreation Management Area spent 1.18 days recreating therein (354,710 visitor days divided by 300,694 visitors).

**TABLE 3.12-1**
**BLM-ADMINISTERED RECREATIONAL AREAS AND OPPORTUNITIES IN THE PROJECT VICINITY**

| Recreation Area | Size | Distance from Solar Plant Site Boundary |
|---|---|---|
| Palo Verde Mountains Wilderness | 30,562 ac | 6.2 mi |
| Little Chuckwalla Mountains Wilderness | 28,034 ac | 7.0 mi |
| Palen/McCoy Wilderness | 259,009 ac | 7.3 mi |
| Big Maria Mountains Wilderness | 45,384 ac | 15.6 mi |
| Chuckwalla Mountains Wilderness | 112,326 ac | 17.3 mi |
| Midland LTVA | 512 ac | 13.3 mi |
| Mule Mountains LTVA | 3,424 ac | 2.8 mi |
| Wiley's Well Campground | 15 trailer sites | 2.9 mi |
| Coon Hollow Campground | 29 trailer sites | 5.9 mi |
| Bradshaw Trail | 70 mi | 1.7 mi |
| Wiley Well District Geode Beds | Dispersed throughout vicinity | 14 mi |

NOTE: Sizes and distances are approximate.
SOURCES: BLM 2019a

## Long-Term Visitor Areas

The BLM manages five LTVAs in California and two in Arizona that accommodate visitors who wish to camp for as long as seven consecutive months. Winter visitors who wish to stay in an LTVA must purchase either a long-term permit for the entire season (September 15 through April 15), or a short visit permit that is valid for 14 consecutive days. Activities in and use of LTVAs are regulated by the rules of conduct set forth in 43 CFR subpart 8365 and BLM's supplemental rules. As indicated in Table 3.12-1, two LTVAs are located in the vicinity of the Project site: Midland and Mule Mountains. In addition to long-term camping, recreational opportunities at LTVAs include hiking; OHV use; rock hounding; viewing cultural sites, wildlife, and unique desert scenery; and solitude (BLM 2019a).

The Mule Mountains LTVA allows camping only within the two year-round campgrounds, Wiley's Well and Coon Hollow. Both feature campsites, picnic tables, grills, shade structures, and accessible vault toilets, but no potable water or electricity (BLM 2019a). Dispersed camping is allowed throughout the Midland LTVA. Table 3.12-2 provides visit and visitor-day estimates for the LTVAs from 2007 to 2009 and from 2016 to 2018.

**TABLE 3.12-2**
**RECREATION USE AT AREA LTVAS BY BLM FISCAL YEAR**

| Location | | BLM Fiscal Year | | | |
|---|---|---|---|---|---|
| | | 2007-2009 (Annual Average) | 2016 | 2017 | 2018 |
| Midland LTVA | Visits | 2,826 | 17,964 | 16,324 | 3,176 |
| | Visitor-days | 14,760 | 26,946 | 13,431 | 1,588 |
| Mule Mountain LTVA | Visits | 5,545 | 20,537 | 17,146 | 9,306 |
| | Visitor-days | 48,600 | 31,747 | 29,121 | 8,492 |

NOTES: 2007-2009 annual average visitor-days were estimated based on the number of long-term permits issued and an assumption of 2 visitors per permit and 180 days of use per permit (BLM 2016). 2016-2018 visitor-days are from RMIS data (BLM 2019b).
SOURCE: BLM 2010, 2016, 2019b

The BLM 2007 to 2009 information was developed for the National Environmental Policy Act analysis of another solar project, the Blythe Solar Power Project, located on the north side of I-10 closer to the Midland LTVA (BLM 2010). That project and another adjacent one, the McCoy Solar Project, were under construction in Fiscal Year 2016. As shown in Table 3.12-2, the number visitor-days for the Midland LTVA in Fiscal Year

2016 was substantially higher than from 2007 to 2009 or from 2017 to 2018. This may be a result of construction workers using the Midland LTVA for temporary housing during construction of solar projects north of I-10 in 2015 and 2016. The Mule Mountain LTVA is the closer of the two to the Project site, and is accessed via Wiley's Well Road.

**The Bradshaw Trail**

The BLM-administered portion of the Bradshaw Trail is a 70-mile Back Country Byway that begins about 30 miles southeast of Indio, California and ends about 15 miles southwest of Blythe (BLM 2019a). The trail was the first road through Riverside County, created by William Bradshaw in 1862 as an overland stage route beginning in San Bernardino, California, and ending at Ehrenberg, Arizona. The trail is a graded dirt road that traverses mostly public land between the Chuckwalla Mountains and the Chocolate Mountain Aerial Gunnery Range. Recreational opportunities include four-wheel driving, wildlife viewing, plant viewing, birdwatching, scenic drives, rock hounding, and hiking. (BLM 2019a).

### *Regional and Local Recreation Resources*

Non-BLM-administered regional recreational resources are concentrated around the Colorado River, about 12 to 17 miles from the Project site. The Riverside County Regional Park and Open-Space District (RPOSD) operates the 24-acre Mayflower Park, which provides short-stay RV and tent camping (RPOSD 2019). Riviera Blythe Marina Park (14 acres) and McIntyre Park (87 acres) are concession-operated and offer both short-stay and long-term RV and tent camping. Each of these parks also offers showers, picnicking areas, boat launches, and related amenities. The Goose Flats Wildlife area (230 acres) offers boating and fishing opportunities (DesertUSA 2019).

The Cibola National Wildlife Refuge, administered by the USFWS, can be reached from the California side of the Colorado River, just south of Blythe, or, from the Arizona side, south of Quartzsite. This refuge was established in 1964 as mitigation for dam construction on the Colorado River, and provides important habitat for migratory birds, wintering waterfowl, and resident species. Recreational opportunities include hunting, fishing, wildlife viewing, and a nature trail (USFWS 2019). The refuge is approximately 20 miles from the Project site boundary and proposed gen-tie line location.

The City of Blythe provides year-round sporting activities. The Blythe Parks Department oversees eight parks (approximately 74 acres total), including five neighborhood parks, two community parks, and one regional park. The Bigfoot Skate Park is located at Todd Park. Other recreational opportunities in Blythe include the Blythe Municipal Golf Course; soccer, football, track and volleyball leagues; and indoor racquetball, basketball, aerobic activities, weight room, and summer swimming. Various nearby privately owned RV parks and campgrounds also provide recreational facilities, including a boat dock, launch ramp, fishing, swimming, horseshoe pits, wildlife observation and other active and passive recreation opportunities (City of Blythe 2007). The Blythe Municipal Golf Course is approximately 12 miles from the solar plant site boundary and the gen-tie line. Other recreational facilities within the City of Blythe are approximately 13 miles or further from the Project site.

## 3.12.2.3 Public Access (OHV Routes)

Recreation and motorized travel opportunities are determined, in part, by the DRECP use allocations and by OHV area and route designations. The BLM is also required to designate all public lands as either open, limited use, or closed to off-road vehicles. The Project site is a limited OHV use area; thus, under the CDCA Plan and NECO Plan Amendment, access by motorized vehicles is allowed on designated routes (BLM 1980, 2002). There are no designated routes within the Project site. Outside the site, Route MM703 (Powerline Road) is an east/west route along the northern boundary of the Project site, roughly parallel to and approximately 1.3 miles south of I-10. Route MM703 intersects with the paved Wiley's Well Road to the west of the Project site, and with routes MM1092 and MM863 to the southeast of the Project site (see Figure 3.12-1, Designated Routes). Additionally, the north/south route MM1086 terminates at MM703 approximately 2 miles west of the CRS, providing a route underneath I-10 to the north side of the highway.

The BLM has no traffic counters or other means to quantify use of routes in the vicinity of the Project site; however, observations by BLM staff and Law Enforcement Rangers indicate that use is relatively low on routes adjacent to the Project site (BLM 2019b). Like recreational use of the Project site, recreational vehicle use in this area is generally limited to the cooler months of September through May and uncommon in the summer months. Recreational vehicle use consists of touring in passenger cars, SUVs, motorcycles, and ATVs.

## 3.12.3 Analytical Methodology

This section analyzes potential effects of the Project and alternatives related to recreation. This analysis of potential effects on recreation assesses the impacts on available land acreage as well as known recreational uses including hiking, backpacking, boating, fishing, and camping in established federal, state, or local recreation areas and/or wilderness areas. The CDCA Plan and NECO Plan Amendment, which includes a detailed inventory and designation of routes in the vicinity of the Project, were reviewed to determine impacts on routes. Additionally, methods identified in the Long-Term Monitoring Strategy for the Riverside East Solar Energy Zone, which includes the Project site as well as several cumulative project sites, were used to analyze impacts specific to use of recreational resources resulting from solar projects (BLM 2016).

## 3.12.4 Direct and Indirect Effects

### 3.12.4.1 Alternative A: Proposed Action

#### *Recreational Use of Public Lands*

##### On-Site

**Construction, Operation and Decommissioning.** The conversion of approximately 2,500 acres of public lands to a solar project could disrupt dispersed recreational activities by making the site inaccessible for recreational use. Day and overnight users would no longer be able to use the Project site for the types of dispersed recreational uses identified in Section 3.12.2.1 during construction, operation, maintenance, and decommissioning. Because vehicle parking and camping is allowed only within 300 feet of a designated route, the only portion of the Project site currently open to RV and other vehicle camping is in the northeast portion adjacent to the Colorado River Substation. An area of about 11 acres (roughly 0.6 mile of a 150-foot strip) within the proposed fenceline would become inaccessible to these users; an area of equal size would remain accessible between the fenceline and Powerline Road in this location, in addition to the useable area along other portions of Powerline Road. Approximately 250 acres of an 8,600-acre rock hounding area would be within the Project fenceline and thus inaccessible. The Project would not adversely affect access to other portions of this rock hounding area.

As an indirect effect of the Project, campers, hikers, backpackers, and other users could choose to use other desert lands in the vicinity for their recreational experiences and benefits. This would result in increased use of those areas, which could lead to loss of some native vegetation, wildlife habitat fragmentation or loss, elevated soil loss, increases in noise, and possible temporary declines in air quality from more concentrated vehicle use in a smaller available area. However, BLM Rangers report observing low dispersed recreational use within the Project area (BLM 2019b), and it is considered that this impact would be minimal as the number of users potentially displaced would be low; thus, the effects of distributing this minimal existing use among other locations in the region would be negligible.

##### Off-Site

**Construction, Operation and Decommissioning.** The Palo Verde Mountains and Little Chuckwalla Mountains Wilderness Areas are the closest Wilderness Areas to the Project site, each more than 6 miles away. As discussed in Section 3.2, Air Resources, construction, operation, maintenance, and decommissioning activities could generate dust in the form of particulate matter (PM). However, dust emissions from the Project would be so attenuated over the distance from the Project site to these wilderness areas that they would not be detectable above ambient conditions to users of these Wilderness Areas. For a discussion of the potential impacts on visual quality from wilderness areas, see Section 3.17, Visual Resources.

Dust in the form of particulate matter ($PM_{2.5}$ and $PM_{10}$) would occur within the Project fence line and drop off quickly with distance. Per MM AIR-1, a dust control plan would be implemented for the Project and would include multiple requirements to limit visible fugitive dust plumes from exiting the Project site. With implementation of MM AIR-1, the effect the effect of dust from the Project site at recreational users outside the Project fence line would be virtually undetectable.

The noise analysis prepared for the Project estimates that during some conditions, construction could result in a noise increase of up to 3 A-weighted decibels (dBA) at Wiley's Well Campground within Mule Mountain LTVA (AECOM 2019). As explained in Section 3.10.2.2, General Information on Noise, an increase of 3 dBA is considered a barely perceptible change in an environmental noise level, and an increase of 5 dBA is considered a readily perceptible change in an environmental noise level. Therefore, the increase in noise levels that would be caused by Project construction would not be readily perceptible and would not result in a substantial overall increase in noise at this location; however, the individual sounds of construction may be audible at this campground even if the noise level increase is not readily perceptible. At locations close to the Project fence line, dispersed recreational users would likely perceive an increase in noise levels from construction and also may hear specific construction-related sounds. The impact of construction noise on recreational users of surrounding lands would be minor, short-term, and limited to areas within about 2 miles of the Project site.

Visitors camping at the Midland and Mule Mountain LTVAs are seeking opportunities for solitude and/or for socialization with similar users in a semi-primitive environment. It is anticipated that some construction workers could reside in RV campers at these LTVAs in California and the La Posa LTVA south of Quartzsite in Arizona, or possibly camp on public lands in the vicinity of the Project site during construction. Although the BLM offers developed campgrounds within commuting distance of the Project, only the LTVAs allow long-term camping. The Midland and Mule Mountains LTVAs allow camping up to 7 months (September 15 through April 15) with a special use permit. Outside of these dates, the camping limit is 14 days (BLM 2019a). Depending on their numbers, authorized construction workers using the LTVAs could affect the social setting and camping experience in the LTVAs and increase wear on the physical infrastructure, but would not create a scarcity of available space for other users. Midland LTVA is 512 acres, and Mule Mountain LTVA is 3,424 acres. Except for the designated campsites at Wiley's Well and Coon Hollow, each LTVA has space to accommodate several hundred RV units with a minimum distance of 15 feet between units, which is well in excess of current use.

Construction would result in an increase of several hundred workers on average and up to 427 workers at peak times, and would last 46 months. The maximum authorized use of LTVAs by construction workers would impact the social and recreation experience of winter users. If use of the LTVAs reduced spacing and relative solitude, seasonal long-term visitors could move to other LTVAs in Arizona or Imperial County, thereby compounding crowding at these already popular sites. If there is significant use of the LTVAs by workers, then the BLM may need to increase law enforcement patrols at the LTVAs, reducing patrols on public lands elsewhere. Additionally, although it is possible that unauthorized use of LTVAs could occur if users stay longer than the 14 days allowed between April 16 and September 14, such use would be subject to law enforcement and would be unlikely because this area experiences extremely hot weather during the off season.

The potential effect of solar project construction workers using LTVAs was observed in Fiscal Year 2016 at the Midland LTVA, the closest LTVA to two solar projects that were under construction during that fiscal year. The visitor-days shown in Table 3.12-2 for the Midland LTVA are substantially higher in Fiscal Year 2016 than in any other years with available information. Over approximately 210 days in the long-term camping season, the data show that Midland LTVA experienced 26,946 visitor-days in Fiscal Year 2016, for an average of about 130 visitors on any given day. Compared to an average of about 70 visitors from 2007 to 2009, this represents an increase of 86 percent. The data suggest that about 60 construction workers from the two nearby projects may have been using the Midland LTVA in addition to its normal, annual user group. In the 512-acre Midland LTVA, the average daily Fiscal Year 2016 visitor use would have resulted in an average of nearly 4 acres per visitor, providing ample opportunity for visitors seeking privacy and solitude to disperse throughout the site. The Mule Mountains LTVA is much larger, at 3,424 acres, and therefore could accommodate an even greater increase in use by construction workers while maintaining opportunities for privacy and solitude.

The temporary increase in demand for accommodations during construction, and the resulting potential impact on LTVAs and other nearby recreation areas, would be minor to moderate and short-term (i.e., during construction and decommissioning). Mitigation Measure REC-2 would provide for additional services, if needed, to ensure that Project-related increases in LTVA use would not result in substantial physical deterioration.

### *Recreational Use of Regional and Local Facilities*

#### Construction, Operation and Decommissioning

Due to the distance between the Project site and regional and local recreational facilities described in Section 3.12.2.2 (e.g., Cibola National Wildlife Refuge, County parks and regional concession-operated parks, and City of Blythe parks), each of which is at least 11 miles from the Project site, there would be no impact on users of these facilities from noise and/or dust created by construction, operation and maintenance, or decommissioning activities.

Riviera Blythe Marina Park, McIntyre Park, and private RV parks in and around Blythe provide long-term camping facilities and supporting recreational uses. Impacts on these resources would be similar to impacts on LTVAs described above. Depending on the number of authorized workers using the long-term camping facilities, their presence could affect the social setting and camping experience at these sites, increase wear and tear on their physical infrastructure, and reduce the availability of short-term, recreational campsites for other users. The result would be a moderate, short-term impact.

### *OHV Use*

#### Construction, Operation and Decommissioning

As no OHV routes cross the Project site, the Project would not require long-term closure of route MM703 (Powerline Road) or any other OHV routes. Short-term closures of the portion of route MM703 between Wiley's Well Road and the CRS access road could be required during construction and decommissioning to allow work within the roadway, or for safety while moving large equipment and materials. In that event, OHV users could use routes MM712 and MM637 instead, which are located approximately 1.3 miles north of and roughly parallel to MM703, and are significantly closer to I-10 than MM703. While using this detour, OHV users would experience increased noise from the freeway compared to the more remote MM703. Recreational users of MM703 who were unaware of the closures could arrive and need to turn back to the nearest alternate route. An unexpected detour could reduce the recreational enjoyment experienced by the public, and could result in users being unprepared for the longer trip, a potential safety hazard.

Mitigation Measure REC-1 would require the Applicant to coordinate closures of MM703 with the BLM at least 60 days in advance of a closure, and to ensure adequate signage and alternate route information would be posted at certain route intersections. Closures of MM703 would not affect access to Mule Mountain LTVA or the two campgrounds located south of the Project site, which are accessible via Wiley's Well Road.

During all phases of the Project, activity at the site and the installation of a new industrial feature could attract OHV recreationists, campers, or other visitors in the surrounding viewshed to the site boundary via designated OHV routes or over land. This could increase vandalism, illegal cross-country use, and other disruptive behavior. Mitigation Measure REC-1 would reduce this potential effect by requiring notification of penalties for any off-route OHV activities to deter off-route travel.

## 3.12.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.12-3) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.12-3 summarizes the change in effects on recreational resources under Alternative B, by Design Element.

**TABLE 3.12-3**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Recreational Resources | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Construction, Operation and Decommissioning*

Alternative B consists of the same acreage and workforce as Alternative A, and it would cause the same types of recreation-related impacts. These include minor, short-term noise effects on dispersed recreation use of the surrounding lands; moderate, short-term effects on the social and recreation experience of LTVA users; and moderate, short-term impacts due to temporary closures of route MM703/Powerline Road. Mitigation Measures REC-1 and REC-2 would reduce these impacts. None of the Alternative B Design Elements would result in changes to the impacts identified for Alternative A.

## 3.12.4.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation and Decommissioning*

Alternative C would reduce the acreage of public land that would become unavailable for dispersed recreation compared to Alternative A, but would have the same impact on areas used for vehicle camping along Powerline Road. Only 160 acres of the mapped rock hounding area would be inaccessible under Alternative C. The same types of recreation-related impacts described for Alternative A would also occur under Alternative C, including minor, short-term noise effects on dispersed recreational use of the surrounding lands; moderate, short-term effects on the social and recreation experience of LTVA users; and moderate, short-term impacts due to temporary closures of route MM703/Powerline Road. Mitigation Measures REC-1 and REC-2 would reduce these impacts.

## 3.12.4.4 Alternative D: No Plan Amendment/No Action/No Project

The No Plan Amendment/No Action/No Project Alternative would result in no impacts on recreation or public access because the Project would not be implemented, no changes would occur, the existing environmental setting would be maintained, and there would be no change to the existing use.

# 3.12.5 CEQA Significance Thresholds and Determinations

Based on the California Environmental Quality Act Guidelines Appendix G, Section XV, a project would have a significant impact on recreational resources if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

## 3.12.5.1 Alternative A: Proposed Action

**Impact 3.12.5a: Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (*Less than significant with mitigation incorporated*)**

### Construction, Operation and Decommissioning

Construction would result in an increase of several hundred workers on average, up to 427 workers at peak times, and would last 46 months. If any temporary workers should move into the region from elsewhere, the existing day-use parks and recreational facilities and short-term camping facilities described above may experience increased use. The short-term increase in population would be minimal compared to the existing population served by these facilities, and no single recreational facility would be likely to receive an increased level of use such that substantial physical deterioration would occur. However, as an increase in use and deterioration is possible as a result of activities associated with construction of the Project, mitigation measures have been included to address potential adverse effects, as described below.

The Midland LTVA has enough space to accommodate several hundred RV units, which is far in excess of current use (i.e., at least 7 to 14 acres per visitor, on average). In the Mule Mountain LTVA, camping is only permitted at designated sites within the Wiley's Well and Coon Hollow Campgrounds, for a total of 43 sites (BLM 2019a). Although it is not expected that increases in use from construction workers residing in RV campers would substantially crowd the LTVAs (see Section 3.13.5.1), increased use by construction workers could have other impacts. The increased use by construction workers could accelerate the physical deterioration of facilities such as campground toilets, shade structures, grills, and picnic tables, and may result in excess trash accumulating if typical trash collection services are not adequate to serve the increased use. Excessive use could also lead to physical deterioration of the unpaved portion of Wiley's Well Road. Such physical deterioration would be a significant impact on these recreational facilities. Mitigation Measure REC-2 would provide for additional services to prevent and/or correct deterioration due to excessive use, if it occurs, and therefore would reduce this impact to less than significant.

Increases in demand for recreational facilities are typically associated with substantial increases in population. The Project would not involve a residential component that would result in increased usage of existing recreational facilities once operational. During operations the Project would employ 10 full-time workers, and up to 40 temporary workers during panel cleaning. Even if all the permanent operational staff moved into the local area from elsewhere and they and any family members began using the existing parks and recreational facilities described above, the potential increase in use would be negligible and would not result in substantial physical deterioration. The effects of temporary workers on recreation opportunities in the area would likewise represent a very small percentage of the existing recreation use, and would be of short duration. Making the Project site unavailable for dispersed recreation would not induce a substantial shift in recreational use to other desert lands near the Project, because observed recreational within the Project site is very low. Operation and maintenance impacts would be less than significant.

In order to address the Project's impact on access to the Mule Mountain LTVA or the two campgrounds located south of the Project site, the Project would implement Mitigation Measure REC-1, which would require the Applicant to coordinate closures of MM703 with the BLM at least 60 days in advance of a closure, and to ensure adequate signage and alternate route information would be posted at certain route intersections.

Decommissioning would require a peak workforce and duration similar to construction, and therefore would have a similar effect on recreational facilities in the Project vicinity compared to the construction phase, described above. Upon completion of decommissioning, the lands within the Project site would again become available for recreational use. Impacts would be less than significant.

### Mitigation Measures

Implement Mitigation Measures REC-1 and REC-2.

#### Significance After Mitigation

This impact would be less than significant after implementation of Mitigation Measures REC-1 and REC-2.

**Impact 3.12.5b: Would the Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? (*Less than significant*)**

#### Construction, Operation and Decommissioning

The Project does not include new recreational facilities; as existing campgrounds would be adequate to provide temporary accommodations during construction. During the peak of construction, the Project workforce would be up to 427 workers. Some of these workers could temporarily move into the local area from elsewhere. As discussed in Section 3.13, Socioeconomics and Environmental Justice, the City of Blythe has a population of approximately 13,000 people (excluding institutionalized population). The addition of workers from the Project construction would not result in the need to construct or expand recreational facilities. Impacts would be less than significant.

#### Mitigation Measures

None required.

#### Significance After Mitigation

Not applicable. No mitigation is required.

## 3.12.5.2 Alternative B: Alternative Design

### *Construction, Operation and Decommissioning*

Alternative B generally would cause the same types of recreation-related impacts as Alternative A. This alternative would have the same potential for the Project workforce to increase the use existing recreational resources. Mitigation Measures REC-1 and REC-2 would reduce the effect of the impacts and, as with the effects be Alternative C generally would cause the same types of recreation-related impacts as Alternative A. In particular, Mitigation Measure REC-1 would require the Applicant to coordinate closures of MM703 with the BLM at least 60 days in advance of a closure and Mitigation Measure REC-2 would require LTCA permit documentation to provide for additional services, if needed, to ensure that Project-related increases in LTVA use would not result in substantial physical deterioration. During construction and decommissioning, this alternative would have the same potential for the Project workforce to increase the use of existing recreational resources. Mitigation Measure REC-1 and REC-2 would reduce the effect of the impacts and, as with Alternative A, the effects would be less than significant.

## 3.12.5.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation and Decommissioning*

Alternative C generally would cause the same types of recreation-related impacts as Alternative A. During construction and decommissioning, this alternative would have the same potential for the Project workforce to increase the use of existing recreational resources. Mitigation Measures REC-1 and REC-2 would reduce the effect of the impacts and, as with Alternative A, the effects would be less than significant.

## 3.12.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The effects of the No Plan Amendment/No Action/No Project Alternative would not change the use of existing recreational facilities because the proposed facilities would not be constructed, operated, maintained, or decommissioned. The No Plan Amendment/No Action/No Project Alternative would have no impacts on use on existing recreational facilities, as none currently exist on the Project site. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained.

## 3.12.6 Cumulative Effects

### 3.12.6.1 Alternative A: Proposed Action

#### *Recreational Use of Public Lands*

**Construction, Operation, and Decommissioning**

The geographic scope of the cumulative effects analysis for recreation comprises all public lands in eastern Riverside County. The temporal scope includes the construction, operation, maintenance, and decommissioning phases of the Project. During this period, the existence of the Project would preclude the use of the Project site for recreation, and thereby affect the amount of public lands within eastern Riverside County available for recreational use.

The projects described in Table 3.1-1 would occupy over 40,000 acres of BLM-administered lands in eastern Riverside County. Some of this area already has been developed for solar or other energy projects, and some has not yet been built. The total cumulative area of these projects represents approximately 2.5 percent of the total BLM-administered lands in eastern Riverside County, with the Project representing about 0.15 percent. Over 500,000 acres of formerly designated MUC-M lands in eastern Riverside County would remain available for the same types of recreational uses that are allowed and appropriate on the Project site, and other classes of lands could also support some of the same recreational uses that are allowed on formerly designated MUC-M lands. Further, as the energy projects in the cumulative scenario were decommissioned, these lands would again be available for recreational use. Finally, most of the projects in the cumulative scenario are located in areas with low recreation use, much like the Project site. Because the sites identified for development are low-use, and because so much public land in the region would remain available for dispersed recreational use, the cumulative impact on general recreational use of public lands would not be significant.

As described above, it is anticipated that some construction workers could reside in RV campers at the Mule Mountain and Midland LTVAs in California and the La Posa LTVA south of Quartzsite in Arizona; these LTVAs make up the geographic scope of this analysis with respect to impacts on the LTVAs. Other projects in the cumulative scenario, such as the Desert Quartzite Solar Project, also could result in increased use of these LTVAs. If construction schedules are staggered, the cumulative effect would be an increase in use at the level described for the Project, but sustained over a longer duration as multiple projects begin and complete construction. If construction schedules overlap, multiple projects could contribute simultaneously to crowding and changes in the recreational experience at LTVAs. While the estimated Project-specific effect on LTVAs would be minor to moderate (see Section 3.12.4.1), the cumulative impact on LTVAs could be minor to moderate and long term under staggered construction schedules, or moderate and shorter term under overlapping schedules. Mitigation Measure REC-2 would ensure that Project-related increases in LTVA use would not result in substantial physical deterioration; therefore, the Project’s contribution to this cumulative impact would not be cumulatively considerable.

#### *Recreational Use of Regional and Local Facilities*

**Construction, Operation, and Decommissioning**

The geographic scope of the cumulative effects analysis for recreation at regional and local facilities includes the area described in Section 3.12.2.2. The temporal scope includes all phases of the Project, beginning with construction and ending after decommissioning. As described above, Project workers could use the long-term camping facilities and their associated recreational amenities, primarily during construction and decommissioning. The other projects in the cumulative scenario that involve longer-term construction periods could result in a similar demand for and use of long-term camping and other recreational facilities. In combination, the increased use of these resources due to the presence of construction workers for this Project and the cumulative projects could affect the social setting and camping experience in LTVAs and increase wear on the physical infrastructure of these sites. Additionally, increased demand for other types of recreation resources and the displacement of dispersed recreation from the Project site and other projects’ development footprints could reduce the availability of short-term recreational uses for other visitors to the area. However, it is unlikely that the various construction projects in the cumulative scenario would all overlap to the extent that a significant cumulative impact on the availability of recreational amenities would occur.

#### *OHV Use*

##### Construction, Operation and Decommissioning

The Project would not contribute to cumulative impacts related to permanent closures and/or rerouting of OHV routes. The Project's incremental contribution to temporary, construction-related impacts on OHV routes would be limited to short-term closures of MM703, for which detours are available to allow OHV users to access all relevant sites and attractions. Impacts on the recreational experience and OHV preparedness would be reduced through implementation of Mitigation Measure REC-1, which requires advance coordination with the BLM of temporary route closures during construction. The Desert Quartzite Solar Project also would require short-term closures of MM703 during construction, and would be subject to mitigation similar to Mitigation Measure REC-1. If the construction of both projects overlaps in time, the overall mileage of the closed portion of the route could be greater and of longer duration than for either project alone, potentially altering the detour routes necessary to travel around the closure, and potentially rendering project-specific signage for this Project inadequate. Therefore, Mitigation Measure REC-1 also requires that the Applicant coordinate with the BLM to determine if any other projects would result in route closures, and to provide detour information accordingly. With implementation of this mitigation measure, the Project's contribution to a potentially significant cumulative impact on OHV users would be reduced to a level that is not cumulatively considerable.

## 3.12.6.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

The contribution of Alternative B to cumulative impacts on recreation would be approximately the same as Alternative A because both alternatives have similar acreage and workforce requirements. As with Alternative A, under Alternative B, an increased use of recreational lands, trails, and LTVA campground facilities is anticipated. Thus, mitigation measures would also be implemented under Alternative B to reduce its contribution to impacts related to long-term visitor areas. Alternative B would also preclude the use of the Project site for recreation and, thereby, affect the amount of public lands that would available for recreational use. Similar to Alternative A, over 500,000 acres of lands in eastern Riverside County would remain available for recreational use, other classes of lands can also support some of the same recreational uses that are allowed on these lands, and upon completion of decommissioning, these lands would become available for recreational use. Additionally, under Alternative B the incremental contribution of temporary, construction-related impacts to OHV routes would be reduced through implementation of mitigation measures, as with Alternative A.

## 3.12.6.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

As with Alternative A, because the Reduced Acreage Alternative would require a similar workforce and duration of construction, the contribution of Alternative C to cumulative effects on recreational resources would be the same as described under Alternative A. As with Alternative A, mitigation measures would also be implemented under Alternative C to reduce the contribution to impacts related to the use of long-term visitor areas. Under Alternative C, a slightly reduced project footprint would be utilized for the solar facility which would preclude the use of the site for recreational purposes during construction and operation. As with Alternative A and B, this would affect the amount of public lands available for recreational use. Similar to Alternative A, over 500,000 acres of lands in eastern Riverside County would remain available for recreational use, other classes of lands can also support some of the same recreational uses that are allowed on these lands, and upon completion of decommissioning these lands would become available for recreational use. Additionally, the incremental contribution, under Alternative C to temporary, construction-related impacts to OHV routes would be reduced through implementation of mitigation measures, as with Alternative A.

### 3.12.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, there would be no occupation of land area which would interfere with current recreational uses or OHV routes and no use of recreational facilities by workers. If Alternative D were implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, Alternative D would not contribute to cumulative recreation impacts.

## 3.12.7 Residual Effects

Following implementation of mitigation measures provided in Appendix B, all adverse impacts on recreation resulting from the construction, operations, maintenance, and decommissioning of the Project or alternatives would be avoided or substantially reduced.

# 3.13 Socioeconomics, Environmental Justice, Population and Housing

## 3.13.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning socioeconomics, environmental justice, and population and housing. The regulations applicable to this analysis are summarized in Appendix E.

## 3.13.2 Regional and Local Environmental Setting

### 3.13.2.1 Socioeconomic Setting

The Project site is located in eastern Riverside County, approximately 13 miles southwest of the city of Blythe. The Project site and adjacent lands are vacant with no existing population or housing. The nearest population is composed of inmates at the Chuckawalla Valley State and Ironwood State Prisons, both located approximately 3.2 miles west of the Project site. Areas of potential social and economic effects (i.e., the study area) include Riverside County, the portion of Chuckwalla Census County Division (CCD) in which the Project is located; Blythe CCD (which includes the city of Blythe as well as surrounding communities); La Paz County, AZ; Ehrenberg Census Designated Place (CDP),[1] AZ; and the towns of Quartzsite and Parker, AZ. These planning areas were selected for the following analysis as they represent communities within a 60-mile radius of the Project which would likely serve as potential source areas for construction workforce.

A socioeconomics technical report prepared for the Project (AECOM 2018; see Appendix R.1) includes data from Riverside County and the City of Blythe, summarized in Table 3.13-1 below. Socioeconomic data for the additional population centers and jurisdictions listed above were derived from the U.S. Census Bureau's American Community Survey.

**TABLE 3.13-1**
**POPULATION AND HOUSING DATA IN THE SOCIOECONOMICS STUDY AREA**

| | 2015 Population | Housing Units | Vacancy Rate |
|---|---|---|---|
| Riverside County | 2,361,000 | 815,322 | 14.2% |
| City of Blythe | 19,128[a] | 6,263 | 21.5% |
| Blythe CCD | 14,781[b] | 7,093 | 22.3% |
| Chuckwalla Valley CCD | 8,576 | 2,719 | 73.7% |
| La Paz County | 21,247 | 16,104 | 41.8% |
| Town of Quartzsite | 3,819 | 3,700 | 39% |
| Town of Parker | 3,149 | 1,185 | 16% |

NOTES:
[a] The city of Blythe 2015 population included approximately 5,300 inmates in two state prisons [California Department of Corrections and Rehabilitation 2015]
[b] Blythe CCD includes the city of Blythe and surrounding communities, but not the populations of the state prisons

SOURCE: AECOM 2018; U.S. Census Bureau 2015; Arizona Office of Economic Opportunity [OEO] 2016

[1] As defined by the U.S. Census Bureau, a Census Designated Place is "the statistical counterpart of incorporated places…delineated to provide data for settled concentrations of population that identifiable by name but are not legally incorporated" (U.S. Census Bureau 2019).

### Population and Housing

Table 3.13-1 summarizes population and housing metrics in the study area. Riverside County experienced an average annual growth rate of 3.5 percent from 2000 to 2015. From 2020 to 2040, Riverside County is expected to have an average annual growth rate of 1.4 percent and is expected to reach a population of 3,055,100 by 2035 (SCAG 2016). The city of Blythe grew slightly between 2000 and 2005; after 2005 the population of Blythe declined, resulting in an average annual growth rate of -0.4 percent from 2000 to 2015. From 2020 to 2040, the city of Blythe is expected to have an average annual growth rate of 0.8 percent and is expected to reach a population of 24,200 by 2035 (SCAG 2016). La Paz County is expected to have an average annual growth rate of approximately 0.2 to 0.3 percent from 2016 through 2050 and is expected to reach a population of approximately 22,922 by 2050 (Arizona OEO 2015, 2016).

Vacancy rates in the study area are generally high, ranging from 14.2 percent in Riverside County to 73.7 percent in Chuckwalla Valley CCD (U.S. Census Bureau 2015). In 2015, between Blythe CCD and Chuckwalla Valley CCD, Ehrenberg CDP, and the towns of Quartzsite and Parker, there were approximately 4,350 vacant housing units. Many of these are rental units or seasonal rentals that could be available for construction workers to rent. There are approximately 14 hotels and motels within the Blythe area with approximately 780 rooms (Hotels.com, 2019). Additionally, more hotels and motels are available in the towns of Ehrenberg, Quartzsite, and Palm Springs. In addition to rental homes and hotel rooms that may be available for temporary housing opportunities for construction workers, there are additional options within the Project area in the form of RV facilities, mobile home sites, and campgrounds. The Blythe Area Chamber of Commerce cites that there are over 20 mobile home and trailer parks within the city, some of which could be utilized for temporary workforce housing (Blythe Area Chamber of Commerce 2018).

### Employment

In 2015, both the city of Blythe and Riverside County had lower household incomes and higher unemployment rates than statewide levels. The city of Blythe had a median household income of $42,798 and an unemployment rate of 15.3 percent, whereas Riverside County had a median household income of $56,603 and an unemployment rate of 12.9 percent (U.S. Census Bureau 2015). From 2020 to 2040, the city of Blythe is expected to see an average of 1.5 percent of growth annually in employment, reaching 6,400 employed individuals by 2040. Riverside County is expected to experience a slightly higher average annual employment growth rate at 1.9 percent reaching a level of 1,111,800 employed individuals by 2035 (SCAG 2016). Approximately 480 individuals in the city of Blythe and 92,400 individuals in Riverside County are employed within construction and installation related occupations (U.S. Census Bureau 2015).

In 2015, La Paz County, AZ had a median household income of $34,466 and an unemployment rate of 11.2 percent, Ehrenberg CDP had a median household income of $37,125 and an unemployment rate of 17.8 percent, Parker town had a median household income of $43,271 and an unemployment rate of 11.0, and Quartzsite had a median household income of $29,863 and an unemployment rate of 8.9 percent (U.S. Census Bureau 2015). Arizona is expected to see a 21.2 percent increase in jobs from 2014 to 2024, and a 49.9 percent increase specifically in construction jobs (OEO 2016). La Paz and Mohave Counties currently have an estimated 5,940 individuals employed in construction and installation occupations. The populations of Parker, Quartzsite, and Ehrenberg account for approximately 3.5 percent of the populations within the two counties. Applying this percentage to the individuals employed in construction within the counties indicates that there are around 210 individuals employed in construction within the three towns. The counties are expected to experience a 4.1 percent increase in total jobs from 2017 to 2019, including a 5.0 percent increase (or 299 jobs) in jobs in construction and installation occupations (OEO 2016).[2]

[2] The Arizona Office of Economic Opportunity only reports labor statistics and projections for La Paz County in combination with statistics for Mohave County. Although the combined statistics are reported here, Mohave County is not included in the study area.

### 3.13.2.2 Environmental Justice Setting

To determine the potential for the Project to disproportionately impact an environmental justice community, a demographic screening was used to evaluate whether a minority and/or low-income community exists within the study area. This demographic screening follows information contained in two guiding documents: Environmental Justice: Guidance Under the National Environmental Policy Act (CEQ 1997) and Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses (USEPA 1998). The screening process relies on data from the 2011-2015 American Community Survey 5-Year Estimates. The resources listed in Table 3.13-1 were determined to have the potential for impacts on human health or the environment that could affect local populations. Other resources discussed in this analysis, such as lands and realty, energy conservation, utilities, grazing allotments, mineral resources, and paleontological resources, were determined to have no potential impacts on human health or the environment that could affect local populations and, therefore, were not reviewed further for potential environmental justice effects. Because the geographic scope of impacts differs by resource, the communities considered for the environmental justice analysis similarly vary by type of environmental or human health effect. Table 3.13-2 shows the geographic scope of the environmental justice analysis for each resource considered; each geographic scope is based on the potential area of impact described in the corresponding resource section in Chapter 3.

**TABLE 3.13-2**
**GEOGRAPHIC SCOPE OF ENVIRONMENTAL JUSTICE ANALYSIS BY RESOURCE**

| Resource | Geographic Scope of Effects | Communities Potentially Affected |
|---|---|---|
| Air Resources | 500 foot radius around Project site | none |
| Biological Resources | Project site | none |
| Geology and Soils | Project site | none |
| Cultural Resources | Cultural Resources APE | Colorado River Indian Reservation and Native American individuals in the region[a] |
| Hazards and Hazardous Materials | Project site | none |
| Noise and Vibration | 0.5-mile radius from Project site boundary | none |
| Recreation | 20-mile radius from Project site | CT 459, 469, CT 470, CT 9810, Blythe City, Blythe CCD, La Paz County, Mesa Verde CDP |
| Socioeconomics | Population centers within 60-mile radius | CT 459, 469, CT 470, CT 9810, Blythe City, Blythe CCD, La Paz County, Ripley CDP, Mesa Verde CDP |
| Transportation | Population centers near Blythe | CT 459, 469, CT 470, CT 9810, Blythe City, Blythe CCD, La Paz County, Mesa Verde CDP |
| Visual Resources | Project viewshed | CT 459, 469, CT 470, CT 9810, Blythe City, Blythe CCD, La Paz County |
| Water Resources | groundwater basin, downstream areas | CT 459, 469, CT 9810, Mesa Verde CDP, Ripley CDP |
| Wildland Fire | Project site | none |

NOTES:

[a] The communities and individuals potentially affected by impacts on cultural resources (whether within the direct APE or indirect APE) are not necessarily located within the APE itself. The Colorado River Indian Reservation is analyzed here as a geographic unit for which data is available from the U.S. Census Bureau. Its inclusion as one of the geographies analyzed is not intended to suggest that Native American individuals not associated with the Colorado River Indian Tribes or not living within the Reservation have not been considered.

Table 3.13-2 includes data on minority populations and incidences of poverty for Riverside County, La Paz County, CT 469, CT 9810, City of Blythe, Blythe CCD, Mesa Verde CDP, Ripley CDP, and the Colorado River Indian Reservation. Some overlap exists between the above planning areas and census-designated areas, the purpose of which is to ensure that appropriate geographic units are examined to avoid artificially diluting or inflating the affected minority populations (CEQ 1997).

### Minority Population

According to the federal Council on Environmental Quality (CEQ) guidelines for environmental justice analyses, minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is "meaningfully greater" than the majority population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997).[3] CEQ guidance does not define the term "meaningfully greater;" however, the Federal Interagency Working Group on Environmental Justice NEPA Committee's *Promising Practices for EJ Methodologies* (2016) suggests that the 50 percent approach and the "meaningfully greater" approach should be used together, and that "The Meaningfully Greater analysis requires use of a reasonable, subjective threshold (e.g., ten or twenty percent greater than the reference community)." This analysis embraces the NEPA Committee's advice on this approach. As shown in Table 3.13-3, Riverside County as a whole has a total minority population percentage greater than 50 percent, and thus, as a reference population, itself represents a minority population. Most of the planning areas analyzed also have a minority population percentage greater than 50 percent. Therefore, the "meaningfully greater" approach also is used here to identify those minority populations that notably exceed the percentage of the reference population. As explained above, no official threshold defines this term, and a lead agency must select a threshold that provides a reasonable and meaningful basis for comparison. Here, a threshold of 10 percent greater than the reference population would identify planning areas with minority populations greater than 69 percent for comparative purposes. Such a threshold results in an inclusive definition of minority populations, but is high enough to control for the relatively large margins of error in estimating minority populations in small sample sizes such as census tracts.

For this analysis, because minority populations are nearly all over 50 percent, all geographies except Census Tract 470 and La Paz County, AZ can be considered areas of environmental justice concern. For purposes of comparison of impacts on local communities to impacts on the reference population, planning areas with "meaningfully greater" minority populations than Riverside County include CT 9810 (the two state prisons), the City of Blythe, Mesa Verde CDP, and Ripley CDP.

### Native American Populations

The Project vicinity has historically been occupied by the Chemehuevi, Serrano, Cahuilla, Mojave, Quechan, Maricopa, and Halchidhoma Tribes. Native Americans, including those with any or no tribal affiliations, living in the region, whether or not they are a part of an identified minority or low-income community, represent a community that may be at risk for environmental justice impacts related to physical impacts on cultural resources. In addition, the Colorado River Indian Reservation represents a defined geographic area for which data is available from the U.S. Census Bureau. It is located approximately 15.5 miles east of the Project within both California and Arizona. The reservation is a geo-political tribal designated area shared by the Mojave, Chemehuevi, Hopi, and Navajo nations. Although the geographic area of the reservation is occupied by many members of the Tribes, there are larger populations of individuals who are associated with the Tribes but do not live within the Colorado River Indian Reservation. Both the geographic area of the Colorado River Indian Reservation and the overall population of Native American individuals in the region are considered in this analysis.

### Low-Income Population

For the purposes of this analysis, if a community's percentage of individuals in families with incomes under federal poverty thresholds is greater than that of Riverside County, that community is considered a low-income population. As shown in Table 3.13-3, all of the planning areas analyzed have a greater percentages of people with family incomes below federal poverty thresholds than that of Riverside County, and nearly all have notably higher percentage than the County. Therefore, these areas all are considered to have low-income populations.

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3 According to the CEQ guidelines, "Minority" is defined as all persons except non-Hispanic whites. In other words, minority is defined as any racial groups other than white, and all persons of Hispanic origin, regardless of race.

**TABLE 3.13-3**
**RACIAL AND INCOME CHARACTERISTICS FOR RESIDENTS WITHIN THE STUDY AREA**

| | Total Population | Percent Total Minority (Other Than Non-Hispanic White) | Percent of People Below Poverty Level |
|---|---|---|---|
| Riverside County, CA | 2,323,892 | 62.8 | 16.5 |
| CT 469[a] | 1,632 | 64.1 | 26.2 |
| CT 9810[b] | 6,324 | 82.4 | na[g] |
| Blythe City, CA[d] | 19,675 | 72.7 | 23.7 |
| Blythe CCD[c] | 17,781 | 67.6 | 23.8 |
| Mesa Verde CDP | 715 | 71.9 | 41.5 |
| Ripley CDP | 546 | 88.8 | 35 |
| CT 459 | 1,352 | 64.4 | 21.3 |
| CT 470 | 1,483 | 37 | 17.1 |
| Colorado River Indian Reservation, CA[f] | 9,485 | 66.6 | 27.7 |
| La Paz County, AZ[e,h] | 20,304 | 41.1 | 21.1 |

NOTES: All population, race, and poverty data are from the 2016 American Community Survey

a Rural areas of Chuckwalla Valley CCD; excludes state prisons
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 portions of Colorado Indian Reservation that is located in Arizona
f Includes portions of California and Arizona
g The ACS does not define poverty for institutionalized persons.
h Demographic data for Ehrenberg, Quartzsite, and Parker was also reviewed but is not reported here as they are neither minority or low-income communities.

SOURCE: U.S. Census Bureau 2016a; 2016b

## 3.13.3 Analytical Methodology

Consistent with guidance provided by the CEQ for the consideration of social and economic effects (Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act), this socioeconomic analysis examines the impacts of the Project and alternatives with respect to: (1) housing availability and (2) employment and economy of Riverside County from spending and employment. A socioeconomic technical report (AECOM 2018) contains the results from an input-output model (IMPLAN) which was used to estimate the indirect and induced economic impacts from construction, operation, and decommissioning of the Project.

A comparative analysis is provided for each environmental resource that potentially could impact the human environment, to determine if the effects of the Project would be disproportionately high and adverse on identified environmental justice communities (USEPA 1998).

## 3.13.4 Direct and Indirect Effects

### 3.13.4.1 Alternative A: Proposed Action

#### *Socioeconomics*

#### Population

**Construction.** Construction would require an average of 102 to 320 workers, depending on the phase, with a maximum workforce of 180 to 427. As mentioned in Section 3.13.2.1, there are nearly 100,000 workers in construction-related sectors in neighboring counties, of which approximately 1,320 live within the study area, and this number is expected to grow in both the short-term and long-term. Overall, this provides a large labor pool from which the Project could draw. Additionally, relatively high unemployment rates within the study area (6.7 percent in Riverside County and 10.6 percent in La Paz County) suggest that individuals from the local and regional labor pool may be seeking employment opportunities. The regional and local construction labor pool would be sufficient to meet the construction workforce needs of the Project. Even if some of the construction workforce is drawn from outside of the study area, individuals are not expected to permanently relocate to the study area for construction employment. Therefore, construction would result in a short-term, negligible increase in population in the study area.

**Operation.** Up to 10 full-time employees may be required for operation and maintenance. Although it is expected that employees for operation and maintenance would be drawn from the local labor pool, even if several were to relocate to the study area, there would be a negligible long-term impact on population.

**Decommissioning.** Decommissioning would require an average workforce of approximately 320 workers and would involve activities similar to construction. Similar to construction, it is expected that the local labor force could accommodate the labor force required for decommissioning. Limited in-migration is expected for decommissioning activities.

### Housing

**Construction.** Although most construction workers typically do not permanently relocate to construction jobs, some may temporarily relocate to the area from outside the study area. Even if the majority of the 427 construction workers needed for the peak construction relocated to the study area for the period of construction, Riverside County and the city of Blythe currently have sufficient vacant units and temporary housing options to absorb an increase in demand for housing without displacing any existing residents (AECOM 2018). Due to the high vacancy rates identified in Table 3.13-1, the temporary increase in demand for housing is not likely to result in measurable upward pressure on housing prices, and the effect on housing prices would be minor. As discussed in Section 3.13.2.1, within surrounding communities from which workers are likely to commute, there are an estimated 4,350 vacant units, 590 of which are likely to be vacant and available for construction workers to rent. Additionally, within the study area there are more than 780 hotel rooms that could be available for workers. Therefore, even if all construction workers relocated to communities surrounding the Project area, there would be sufficient housing to accommodate the increase in demand for housing. As a result, construction would have a short-term, minor, adverse impact on housing cost and availability in the study area.

**Operation.** In the case that the 10 full-time operational employees migrated to the study area from elsewhere, there would be sufficient housing supply to absorb the change at current market rates, and so the long-term impact on housing would be negligible.

**Decommissioning.** It is speculative to estimate the amount of housing that may be available during decommissioning, 30 years or more after the start of operation. However, based on current estimates of available housing in the study area and predicted rates of growth, it is considered likely that there would be sufficient housing options to accommodate the temporary increase in demand for housing for the average of 320 workers.

### Employment and Local Economy

**Construction.** Generally, construction projects can generate positive socioeconomic effects resulting from wages paid to workers and locally spent on the purchase of goods and services, which generates additional spending through the multiplier effect. Given the size of the construction industry in the study area described in Section 3.13.2.1 as well as high unemployment rates in the study area (15.3 percent in the City of Blythe), available local construction workers could accommodate the majority of the labor needs for the Project. Demand for local unemployed workers would reduce the local unemployment rate and provide employment opportunities and wages to local workers. Given existing high unemployment rates, this effect would fill existing vacancy in the labor pool. If unemployment rates were lower at the time of construction, demand for local workers could place additional pressure on a small unemployed labor pool, reducing the number of workers available within the local economy. Considering both direct economic impacts due to labor income as well as secondary effects of spending from purchases of construction materials, lodging, and services within the county, construction is estimated to generate over $175,000,000 in labor income, and total output of over $475,000,000 (AECOM 2018), resulting in a short-term, beneficial effect on the local and regional economy.

**Operation.** Wages paid to the up to 10 permanent full time staff and purchases made within the county to support Project operation would generate over $500,000 in labor income and over $1,575,000 in total output in Riverside

County annually (AECOM 2018). Additionally, periodic maintenance would require up to 40 temporary workers for up to 2 weeks at a time, providing minor additional labor income inputs to the local economy. Therefore, the Project would have a minor, long-term, beneficial effect on the local and regional economy.

**Decommissioning.** Decommissioning would be similar to construction, but would not occur until after at least 30 years of Project operation; therefore, the direct and indirect economic effect of decommissioning cannot be estimated. However, as decommissioning activities and duration would be similar to construction, economic impacts would be similar and would likely be short term and beneficial.

## *Environmental Justice*

### Construction, Operation, and Decommissioning

Construction, operation, maintenance, and decommissioning of the Project may result in disproportionately high and adverse impacts on minority or low-income populations or on the Colorado River Indian Reservation and associated Native American populations as described below for the following issues:

**Air Resources.** As described in Section 3.2, Air Resources, localized air quality impacts from particulates ($PM_{10}$), due to the distance between the Project site and the nearest residences (over 2 miles), Project construction and operation would not expose sensitive receptors to toxic air contaminants or *Coccidioides* spores associated with Valley Fever. Therefore, the Project would not cause adverse air quality impacts for people residing within the environmental justice communities identified above.

**Cultural Resources.** As described in Table 3.5.1, 23 significant prehistoric period archaeological sites and isolates have been identified which could be adversely affected by the Project. Impacts on known cultural and historic resources of importance to Native Americans, or impacts on such resources discovered after review, could result in a disproportionate adverse impact on members of Native American groups traditionally and culturally affiliated with the Project site. Mitigation Measures CUL-1 through CUL-7 in Appendix B, which outline requirements for resource avoidance and tribal observers, as well as protocols for resource assessment and treatment, would reduce the Project's impact. These mitigation measures would incorporate input and monitoring from the tribes and would minimize and avoid impacts to the extent possible. However, even with the implementation of CUL-1 through CUL-7, impacts on significant cultural and historic resources are still possible. If such adverse impacts were to occur, they could result in a disproportionately high and adverse impact on Native Americans.

**Recreation.** As described in Section 3.12, Recreation, the Project would involve short-term closures of route MM703 to recreational vehicle use and long-term closure of the site to dispersed recreational use. However, existing recreational use of these resources is very low. Detours around the closed portions of MM703 would allow access to all destinations to be maintained throughout Project construction. The Project would have no effect on access to other recreation opportunities and areas such as nearby wilderness areas, long-term visitor areas (LTVAs), the Bradshaw Trail, Wiley Well District Geode Beds, and Mule Mountains and Chuckwalla Valley Dune Thicket Areas of Environmental Concern (ACECs). Therefore, the Project would have no effect on the ability of the environmental justice communities of concern to access these recreational opportunities. The very low level of dispersed use within the site itself could be displaced to adjacent lands within the Chuckwalla Valley Dune Thicket ACEC, which has very similar terrain on the western side of the Project site and is accessible via Wiley Well Road from I-10, just as the Project site is. Consequently, no disproportionately high and adverse recreational access impact would occur even for local environmental justice communities that may have limited means to access dispersed recreational resources farther from the Project site.

**Socioeconomics.** Although impacts on housing prices are expected to be minor, minority and low-income populations in the Project vicinity could experience disproportionately high and adverse effects of rising housing costs because low-income people and people of color typically already have high housing cost burdens relative to their income; this is particularly true of low-income people in California (California Budget & Policy Center 2017). Beneficial effects on employment and local spending could benefit low-income and minority populations; however, if these benefits do not accrue proportionately to these populations, the result would be disproportionately high and adverse because income and opportunity gaps between these populations and more economically and socially privileged populations could widen. The BLM has no information suggesting that minority or low-income populations would not have equal access to Project-related job opportunities. If minority and low-income populations do have access to job opportunities and the effects of local spending, the Project's effect could benefit these populations.

**Transportation.** As described in Section 3.15, Transportation, construction-related traffic, both from worker commuting and transport of materials, would temporarily increase traffic levels on I-10 and the access roads to the Project site. Operation and maintenance of the Project also would result in a minimal increase in traffic. Impacts on traffic and transportation during construction and operation would be minimal and would not be disproportionately high or adverse for environmental justice communities identified above.

**Visual Resources.** The Project would not be visible from any residential areas in a way that would disproportionately affect minority or low-income communities.

**Water Resources.** As described in Section 3.18, Water Resources, construction, operation, maintenance, and decommissioning would not result in adverse impacts on groundwater levels, or water quality that could affect drinking water supplies or other water bodies. As a result, no adverse impacts on water resources would occur that could be experienced disproportionately by minority or low-income populations.

### 3.13.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.13-4) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.13-4 summarizes the change in impacts involving socioeconomics and environmental justice under Alternative B, by Design Element.

**TABLE 3.13-4**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Population | No change | No change | No change |
| Housing | No change | No change | No change |
| Employment and Local Economy | No change | No change | No change |
| Environmental Justice | Minor reduction in impact | Minor reduction in impact | Minor reduction in impact |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Socioeconomics*

#### Population and Housing

**Construction, Operation, and Decommissioning.** Construction, operation, and decommissioning of Alternative B would require approximately the same number of workers as each phase of Alternative A, which would result in a negligible difference in terms of impact on population. Therefore, impacts during construction, operation, and decommissioning of Alternative B on population and housing would be the same as those of Alternative A.

#### Employment and Local Economy

**Construction, Operation, and Decommissioning.** As discussed in Section 3.13.4.1, due to high unemployment rates in the local labor pool and a large existing construction industry, the local construction labor pool is expected to be able to accommodate the majority of the labor needs of the Project. Demand for local unemployed workers would reduce unemployment and provide labor income to local workers. This effect would reduce unemployment, increase labor income, and reduce the available workforce in the study area. Additionally, Project construction would result in the secondary economic effects of spending from purchases of materials, lodging, and services. As a result, construction of Alternative B would have a short-term, beneficial effect on the local economy. Similar to

Alternative A, operation of Alternative B is expected to have minor, long term, beneficial effects on the local and regional economy. Decommissioning of Alternative B would likely be short term and beneficial.

#### *Environmental Justice*

Alternative B would result in resource-related impacts similar to those described above for Alternative A. The design features of Alternative B could avoid direct construction impacts on several of the known cultural and historic resources. However, the remaining resources would still be subject to potential adverse impacts. Additionally, Alternative B would minimize trenching and grading, and would use elevated support structures in lieu of solid cement or steel foundations. This change would reduce the potential for unintended impacts on cultural and historic resources of importance to Native Americans. As a result, Alternative B would result in similar, but slightly reduced impacts on such resources compared to Alternative A, and therefore would slightly reduce the potential for disproportionately high and adverse impacts on Native Americans related to destruction of these resources. Therefore, Alternative B would result in slightly reduced environmental justice impacts when compared to Alternative A.

### 3.13.4.3 Alternative C: Reduced Acreage Alternative

#### *Socioeconomics*

##### Construction, Operation, and Decommissioning

Alternative C would require approximately the same number of workers during construction, operation and maintenance, and decommissioning as Alternative A. The labor force in the study area is sufficient to meet the Project workforce needs and the impacts on population and housing from Alternative C would be minor. The labor income and output generated by Alternative C would be similar to that of Alternatives A and B. Similar to Alternative A, Alternative C would have a long-term, minor, beneficial effect on the local economy.

#### *Environmental Justice*

Alternative C would result in resource-related impacts similar to those described above for Alternative A. Alternative C would result in similar impacts to cultural resources as Alternative A. However, due to the reduced footprint, substantially fewer resources would be affected by Alternative C. Additionally, the potential for impacts on undiscovered resources would be reduced. As a result, Alternative C would result in reduced impacts on such resources compared to Alternative A, and therefore would slightly reduce the potential for disproportionately high and adverse impacts on Native Americans related to destruction of these resources. Therefore, Alternative C would result in slightly reduced environmental justice impacts when compared to Alternative A.

### 3.13.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project alternative would result in no change in socioeconomic conditions, and the existing environmental setting would be maintained. Because the No Plan Amendment/No Action/No Project Alternative would not result in any of the impacts or benefits described in Sections 3.2 through 3.19, it would have no disproportionately high and adverse impacts on populations in the affected area. No impacts related to socioeconomics or environmental justice would occur.

## 3.13.5 CEQA Significance Criteria and Determinations

Based on the California Environmental Quality Act (CEQA) Guidelines Appendix G, a project would have a significant impact on population and housing if it would:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

### 3.13.5.1 Alternative A: Proposed Action

**Impact 3.13.5a: Would the Project induce substantial unplanned population growth in an area, either directly or indirectly? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

For the reasons described in detail in Section 3.13.5.1, the Project would not result in significant in-migration for construction, operational, maintenance, or decommissioning jobs. Additionally, due to the temporary nature of construction labor, even if all workers temporarily move into the study area for the duration of construction of the Project, they are not likely to permanently relocate to the study area. Project operation would require approximately 10 permanent staff, who would represent a negligible increase in population growth if they moved to the area from elsewhere, and would be within the range of planned population growth described in Section 3.13.2.1. Therefore, Project construction, operation, and decommissioning are not expected to directly induce substantial unplanned population growth.

Although the Project would produce additional electricity, the increase in service capacity is intended to assist California utilities in meeting their obligation under the CPUC Energy Storage Framework and Design Program. Therefore, the increase in electricity generation has been considered in planning for current and future demand for electricity and would not create excess available energy resources which would be growth inducing. The Project would have a less-than-significant impact on population growth either directly through employment or indirectly through increased electricity generating capacity.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.13.5b: Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (*No impact*)**

#### Construction, Operation, and Decommissioning

There is no existing housing and there are no residents on the Project site. The Project would not displace any housing units or people and would not require the construction of replacement housing elsewhere. No impact would occur.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

### 3.13.5.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Impacts identified for the Project would be similar under Alternative B. Alternative B would require approximately the same number of workers during construction compared to Alternative A and would require the same workforce during operation and maintenance and decommissioning. Similar to Alternative A, the majority of construction workers are expected to be drawn from the local workforce. The labor force in the study area is sufficient to meet the workforce needs of the Project and the impacts on population and housing from Alternative B would be less than significant.

### 3.13.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Impacts identified for Alternative A would be similar for Alternative C. Alternative C would require approximately the same number of workers during construction, operation and maintenance, and decommissioning compared to Alternative A. Similar to Alternative A, the labor force in the study area could accommodate a majority of the labor needs for Alternative C. Limited in-migration is expected to occur and the impacts on population and housing from Alternative C would be less than significant.

### 3.13.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, the Project would not be constructed. The No Plan Amendment/No Action/No Project Alternative would not result in a change from existing conditions, and the existing environmental setting would be maintained; therefore, it would have no impact on any of the CEQA criteria related to population or housing listed above.

## 3.13.6 Cumulative Effects

The Project and alternatives would have no impact on population and housing, and so could not contribute to significant cumulative impacts related to population and housing.

### 3.13.6.1 Socioeconomics

#### *Alternative A: Proposed Action*

##### Construction, Operation, and Decommissioning

Cumulative socioeconomic impacts could occur if multiple projects in an area have overlapping construction schedules or operations that could affect similar resources. Projects with overlapping construction schedules or operations could create a demand for labor that could not be met by the existing labor pool and could lead to significant in-migration. Significant in-migration could impact social and economic resources such as housing.

Table 3.1-1 identifies past, present, and foreseeable future projects that could overlap with the Proposed Project and result in cumulative socioeconomic impacts. Of the 13 projects, eight have the potential to have overlapping construction periods. In the extremely unlikely scenario that all of the projects listed in Table 3.1-1 were to be constructed concurrently, the projects could lead to a cumulative average construction workforce demand of approximately 2,500 and a peak cumulative workforce demand of 4,227 (ESA 2018).[4]

As identified in Section 3.13.2.1, within surrounding communities in both Riverside County and La Paz County, there are an estimated 1,320 individuals employed in construction related sectors in the study area. Additionally, there are 4,350 vacant rental units which could be available for construction workers within the study area, more than 780 hotel rooms which could be available for construction workers in the city of Blythe, and even more hotel rooms available within a 2-hour driving radius of the Project. Therefore, although there is not currently a sufficient construction workforce to meet the workforce needs of all of the projects identified in the cumulative scenario, there would be a sufficient number of housing options to accommodate workers temporarily relocating to the study area during construction in order to meet the workforce needs of the projects identified in the cumulative scenario. If workers were to temporarily migrate into the study area from outside of the study area, the temporary demand for housing during the construction period could result in upward pressure on the cost of housing. Given high vacancy rates in the study area, a significant increase in the cost of housing is not likely; however, demand for housing resulting from Alternative A could combine with a demand for housing from other projects and result in an increase in housing prices and a decrease in the availability of housing. Therefore, in summary, there is a low potential for cumulative short-term, adverse impacts on population and housing associated with the demand for skilled construction labor for the cumulative projects proposed for future

4 This number was estimated using workforce data that was available for projects listed in Table 3.1-1. Workforce numbers were estimated for other projects (ESA 2018).

development within the geographic scope. Build-out of the cumulative scenario would have a short-term beneficial cumulative impact on employment and the local economy.

### *Alternative B: Alternative Design*

#### Construction, Operation, and Decommissioning

There would be no substantial difference in population, housing, and employment and local economic effects between Alternative A and Alternative B; therefore, the cumulative analysis for Alternative A is applicable to Alternative B.

### *Alternative C: Reduced Acreage Alternative*

#### Construction, Operation, and Decommissioning

There would be no substantial difference in population, housing, and employment and local economic effects between Alternative A and Alternative C; therefore, the cumulative analysis for Alternative A is applicable to Alternative C.

### *Alternative D: No Plan Amendment/No Action/No Project Alternative*

Alternative D would have no contribution to a cumulative impact.

## 3.13.6.2 Environmental Justice

### *Alternative A: Proposed Action*

#### Construction, Operation, and Decommissioning

As described in Section 3.13.5.1, Project's impacts in the areas of air resources, recreation, traffic and public access, visual resources, and water resources would not result in environmental justice impacts and therefore would not contribute to cumulative environmental justice impacts.

As described in Section 3.13.5.1, Alternative A would result in potential adverse impacts on cultural resources which could result in disproportionately high and adverse impacts on Native American populations. As described in Section 3.5.6.1, although Mitigation Measures CUL-1 through CUL-7 would incorporate input and monitoring from the tribes and would mitigate the overall impact of Alternative A on cultural resources, adverse impacts that would disproportionately affect Native Americans could occur. Alternative A's contribution to cumulative impacts on Native American populations resulting from the potential loss of cultural resources would be cumulatively considerable. As a result, the Project would result in cumulatively considerable environmental justice impacts due to impacts on cultural resources.

Project construction has the potential to cause disproportionately high and adverse socioeconomic impacts on minority and low-income populations by causing a temporary increase in housing demand and prices if workers move into the area. The Project's effects could combine with the effects of other projects, and the cumulative effect may be of greater magnitude (more demand and higher housing prices) if construction were to overlap, or of greater duration if construction were to occur in succession. This could exacerbate or prolong disproportionate adverse effects related to housing. For similar reasons, if the benefits of increased employment and local spending from all projects in the cumulative scenario are not distributed to minority and low-income populations, a cumulative disproportionately high and adverse effect would occur related to the widening of income and opportunity gaps. The BLM has no information suggesting that minority or low-income populations would not have equal access to Project-related or cumulative project-related job opportunities. If minority and low-income populations do have access to job opportunities and the effects of local spending, the cumulative effect could benefit these populations.

#### *Alternative B: Alternative Design*

##### Construction, Operation, and Decommissioning

Alternative B would result in slightly reduced environmental justice impacts with regard to cultural resources when compared to Alternative B.

#### *Alternative C: Reduced Acreage Alternative*

##### Construction, Operation, and Decommissioning

There would be no substantial difference in environmental justice effects between Alternative A and Alternative C; therefore, the cumulative analysis for Alternative A is applicable to Alternative C.

#### *Alternative D: No Action/No Project Alternative*

If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. Alternative D would have no contribution to a cumulative impact.

## 3.13.7 Residual Effects

Because no mitigation measures are recommended, impacts on socioeconomics and environmental justice would be the same as discussed in Section 3.13.5.1.

# 3.14 Special Designations

## 3.14.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning special designations. All regulations applicable to the analysis presented herein are summarized in Appendix E.

This section describes the existing special designations in the vicinity of the Project and analyzes the effects of the Project on the Bureau of Land Management's (BLM's) management of special land use designations, focusing on the specific management objectives for which each area has been designated. Special designations either are designated by an Act of Congress or Presidential Proclamation, or are created under Department of the Interior or BLM administrative procedures. The Project site is located within 20 miles of several special designations, including: Wilderness Areas, Areas of Critical Environmental Concern (ACECs), and wild horse and burro ranges (herd areas and Herd Management Areas, or HMAs). This section also includes a discussion of lands with wilderness characteristics. There are no California Environmental Quality Act (CEQA) criteria relevant to the analysis of BLM Special Designations; therefore, this section contains no CEQA analysis.

## 3.14.2 Regional and Local Environmental Setting

The Project site is not located within any Congressional or Administrative special designations (BLM 2018).

### 3.14.2.1 Areas of Critical Environmental Concern

ACECs are areas with special resource values or management concerns that are established through the BLM land use planning process; in this case, through the California Desert Conservation Area (CDCA) Plan (1980) and later the Desert Renewable Energy Conservation Plan (DRECP) (2016), an amendment to the CDCA Plan. In managing ACECs, BLM assigns site-specific caps to limit surface disturbance to a percentage of the ACEC area, and identifies specific management actions to achieve the desired future conditions and allowable uses of each ACEC. Figure 3.14-1 shows the designated ACECs near the Project site. They include the Mule Mountains to the south, the Mule-McCoy Linkage to the west and south, the Chuckwalla and the small Chuckwalla Valley Dune Thicket further to the west, McCoy Valley to the north, and McCoy Wash to the northeast.

While the Project site is not located within a designated ACEC, it is located at the foot of the Mule Mountains ACEC and is directly adjacent to and east of the Mule-McCoy Linkage ACEC. The Mule Mountains ACEC was designated to protect cultural values, and some areas within the ACEC provide a combination of features that have been identified as important climate refugia for wildlife species (BLM 2016). Therefore, objectives for managing this ACEC that may be relevant to the Project include protecting cultural values and climate refugia.

The Mule-McCoy Linkage ACEC was designated to protect wildlife linkage habitat between the Chuckwalla ACEC/Palo Verde Mountains Wilderness and the Palen-McCoy Wilderness for sensitive wildlife, including burro deer, gila woodpecker, Mojave fringe-toed lizard, and several bat species, and also has a high sensitivity for cultural resources (BLM 2016). Therefore, objectives for managing this ACEC that may be relevant to the Project include controlling invasive species on the sand dunes and protecting cultural resources.

### 3.14.2.2 Wilderness Areas

Wilderness Areas are congressionally designated. They are managed pursuant to the federal Wilderness Act of 1964 (16 USC Sections 1131-1136) and the specific legislation establishing each Wilderness Area. Federal agencies are authorized to manage Wilderness Areas for the public's use and enjoyment in a manner that will leave such areas unimpaired for future use and enjoyment as wilderness by providing for their protection and the preservation of their wilderness character. Figure 3.14-1 shows the nearest Wilderness Areas in relation to the Project site. These are the Little Chuckwalla Mountains Wilderness to southwest and the Palo Verde Mountains

Wilderness to the south. Farther from the Project site are the Chuckwalla Mountains Wilderness to the west, and, north of I-10, the Palen/McCoy and Big Maria Mountains Wilderness. The Project site itself is not located within or adjacent to a designated Wilderness Area.

### 3.14.2.3 Lands with Wilderness Characteristics

Pursuant to Section 201(a) of the FLPMA, the BLM is required to maintain an inventory of all public lands and their resource and other values, which includes wilderness characteristics. To be classified as lands with wilderness characteristics, they must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. BLM conducted an inventory of the lands in 2018 and determined that approximately 2,108 acres of lands within the Project site possess wilderness characteristics meeting the classification described above (BLM 2019). However, the BLM does not manage the lands for their wilderness characteristics. Based on a review of a map of lands managed for their wilderness characteristics within the DRECP land use planning area, including the Project site, the Project site does not include lands currently managed for wilderness characteristics (BLM 2018). The nearest area of BLM lands managed for wilderness characteristics is over 7 miles north of the Project site on the far side of the McCoy Mountains (BLM 2019).

### 3.14.2.4 Herd Areas

In 1971, the federal Wild Free-Roaming Horses and Burros Act was enacted to protect and sustain the populations of wild horses and burros on federal land. The areas on BLM land where wild horses and burros were found at the time the Wild Free-Roaming Horses and Burros Act was passed are referred to as "herd areas." Within each herd area, the BLM designated HMAs and currently manages these HMAs to sustain healthy and diverse wild horse and burro populations over the long term. The Project site is not located within a designated HMA. The nearest HMA is the Chocolate-Mule Mountains HMA approximately 18 miles to the southeast (BLM 2011). As shown in Figure 3.14-1, the Project site is located on approximately 2,200 acres of the Chocolate-Mule Mountains herd area; however, the BLM does not identify this area as meeting the long-term needs of an HMA.

## 3.14.3 Analytical Methodology

This impact analysis focuses on whether Project construction, operation, maintenance, and decommissioning would conflict with the status or management goals of the special designation areas in the vicinity of the Project site. This analysis reviews the Project relative to the specific legislation and agency guidance documents that pertain to the management of special designation areas. These include Federal Land Policy and Management Act of 1976 (FLPMA), the CDCA Plan, the DRECP, and relevant BLM policies. With respect to visual resources management of ACECs, Section 3.17, Visual Resources, describes how visual resources would be managed consistent with applicable Visual Resource Management class designations.

## 3.14.4 Direct and Indirect Effects

### 3.14.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The Project would not be located within an ACEC and therefore would not directly conflict with the management of an ACEC, and adopted disturbance limits would not apply within the Project site. As described in Section 3.14.2.1, the Project would be located adjacent to the Mule-McCoy Linkage ACEC and less than a mile from the Mule Mountains ACEC. Because of the proximity of the site to these ACECs, indirect effects could occur during all phases of the Project. For both ACECs, measures to avoid and minimize the spread of invasive plants described in Section 3.3, Biological Resources, would ensure that the Project would not conflict with objectives such as controlling invasive species on sand dunes (Mule-McCoy Linkage) and protecting climate refugia (Mule Mountains). As described in Section 3.5, Cultural Resources, the Project would have no indirect impacts on cultural resources. Therefore, the Project would not conflict with objectives to protect cultural resources known to both ACECs. Based on these analyses and avoidance and minimization measures, the Project would not conflict with BLM's ability to manage these ACECs per their objectives. The other ACECs listed in Section 3.14.2.1 would be too distant from the Project site to experience indirect effects, including noise and dust generation, and the Project would have no impact on their management.

As discussed in Section 3.10, Noise, the loudest noise associated with the Project (during the construction phase) would attenuate such that the sound would be barely audible to users of the nearest Wilderness Areas, the Little Chuckwalla Mountains Wilderness and the Palo Verde Mountains Wilderness. Additionally, as discussed in Section 3.2, Air Resources, all phases of the Project could generate dust in the form of particulate matter (PM), specifically $PM_{10}$ and $PM_{2.5}$, but these emissions would occur within the Project fence line and drop off quickly with distance, with no effect on Wilderness Areas.

The lands in the vicinity of the Project site include lands that possess wilderness characteristics, as defined by the FLPMA of 1979. Approximately 2,108 acres of lands with wilderness characteristics are within the boundary proposed under Alternative A, as these lands are generally roadless, natural (open desert) available for solitude or recreation. However, the Project site's proximity within one mile of the I-10 transportation corridor and its location adjacent to existing high intensity industrial use (i.e., the Colorado River Substation) decrease those characteristics to some extent under existing conditions. Although the BLM does not manage the site for wilderness characteristics, the Project would include direct effects on wilderness characteristics such as road construction, the presence of energy infrastructure, and fencing; thus approval of the Project under Alternative A would effectively remove approximately 2,108 acres of lands with wilderness characteristics from public use for the 30-year duration of the solar facility ROW. The Project would not result in direct effects on the natural condition of lands managed for their wilderness characteristics outside of the Project area, which are located 7 miles or more from the Project site. The Project would have no impact on BLM's ability to manage these lands to preserve wilderness characteristics.

The Project would develop a solar facility within the boundaries of a herd area, which the BLM allows under its multiple use objectives. The Chocolate-Mule Mountains HMA is too distant from the Project site to experience indirect effects, and thus the Project would have no impact on this HMA. No impact would occur with respect to special designations for the management of wild horse and burro populations.

### 3.14.4.2 Alternatives B and C

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.14-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.14-1 summarizes the change in effects on special designations under Alternative B, by Design Element.

**TABLE 3.14-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Special Designations | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

Alternatives B and C would be developed on the same Project site and therefore would have similar site-specific impacts related to the management of off-site special designations. Like Alternative A, neither Alternative B nor Alternative C would be located within an ACEC or designated Wilderness Area, nor within lands managed for wilderness characteristics. However, as with Alternative A, Alternative B and C would include direct effects on the natural condition of lands with wilderness characteristics as access roads and fencing would also be constructed under Alternatives B and C. This would remove approximately 2,108 (Alternative B) or 1,800 (Alternative C) acres of lands with wilderness characteristics from public use for the duration of the ROW, if approved. The same measures to avoid and minimize impacts on biological resources that would apply to Alternative A also would apply to both Alternatives B and C and would ensure that neither would conflict with objectives to protect biological resources within the two nearby ACECs. Alternatives B and C would have no indirect impact on cultural resources in the ACECs. Noise and air quality effects on Wilderness Areas would be similar or reduced compared to Alternative A, as described in more detail in Section 3.10, Noise, and Section 3.2, Air Resources, and therefore also would be negligible. Under these alternatives, following decommissioning, energy infrastructure, solar panels, and fencing would be removed and the lands returned to a natural condition. Although direct impacts would persist for the 30-year duration of a ROW, impacts to lands with wilderness characteristics would not be permanent. Neither alternative would have direct or indirect effects on the natural condition of lands with wilderness characteristics outside of the Project area. For the same reasons described for Alternative A, no impact would occur with respect to special designations for the management of wild horse and burro populations.

### 3.14.4.3 Alternative D: No Plan Amendment/No Action/No Project

Since no action would occur, Alternative D would have no impact on special designations.

## 3.14.5 Cumulative Effects

### 3.14.5.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The geographic scope of potential cumulative impacts includes the limits of the special designations that would be affected by the Project and action alternatives. As described above, no direct impact on Wilderness Areas or herd areas or HMAs would occur. Although the Project site is located adjacent to existing industrial uses and is not managed for wilderness characteristics, the Project would introduce new industrial elements, and fencing into the desert landscape, which arguably has wilderness characteristics. The Project's effect of partitioning the open desert landscape when combined with similar effects of other projects in the vicinity of the Project could have a cumulatively considerable impact for lands with wilderness characteristics in the Project site and in the surrounding area.

This analysis of cumulative impacts also addresses potential effects on the Mule Mountains ACEC and Mule-McCoy Linkages ACEC. The temporal scope of potential cumulative impacts includes construction through the lifespan of all proposed permanent facilities that may impact the nearby ACECs and lands with wilderness characteristics. Of the current and reasonably foreseeable projects identified in Table 3.1-1, Crimson Solar Cumulative Projects List, only the Desert Quartzite Solar Project is close enough to the Mule Mountains ACEC to contribute to cumulative impacts on that area. As this solar project is of comparable scale as the Project, indirect effects such as noise, dust, and the spread of invasive plants could reasonably be expected occur in the vicinity of the ACEC. The Mule-McCoy Linkages ACEC consists of two parcels, including the portion adjacent to the Project site on the south side of I-10 and another parcel on the north side of I-10. Taken as a whole, this ACEC, managed for its cultural resource values and climate refugia, could be affected (in ways similar to those described above) by the Desert Quartzite, Blythe, and McCoy solar projects, as well as the Devers-Palo Verde 2 transmission line.

As analyzed in Section 3.14.4, the Project and alternatives is not anticipated to result in substantial adverse effects on the management of climate refugia or cultural resources within the Mule Mountains ACEC. The Desert Quartzite Solar Project, located approximately 1 mile from the Mule Mountains ACEC, would not directly or indirectly affect the ACEC and therefore would not cause or contribute to cumulative impacts on climate refugia or cultural resources within the ACEC. As described in Section 3.14.4.1, the extent of noise and air quality indirect impacts resulting from the Project would be narrow beyond the Project boundaries, and would not substantially affect even adjacent portions of any ACECs. The impacts of the projects in the cumulative scenario would be similarly site-specific; the indirect effects on these ACECs from each project would occur in different locations, such that the minor indirect effects of noise and dust would be spread across different parts of each potentially affected ACEC and would not combine to result in a substantial cumulative impact.

#### 3.14.5.2 Alternatives B and C

***Construction, Operation, and Decommissioning***

Like Alternative A, Alternative B and Alternative C would have no impact on Wilderness Areas, or herd areas or HMAs. Additionally, these alternatives also would not be located within an ACEC or designated Wilderness Area, or within lands managed for their wilderness characteristics. As with Alternative A, approximately 2,108 acres of inventoried lands with wilderness characteristics would be directly affected by actions proposed under Alternatives B and C. These alternatives would result in the same approximate contributions to cumulative impacts described for Alternative A, and thus would not contribute to substantial cumulative impacts related to the management of special designations.

#### 3.14.5.3 Alternative D: No Plan Amendment/No Action/No Project Alternative

Because Alternative D would have no impact on special designations, it would not contribute to a cumulative impact on special designations.

### 3.14.6 Residual Effects

Because no mitigation measures are recommended, residual impacts on specially designated lands would be the same as discussed for the Project.

# 3.15 Transportation

## 3.15.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning transportation. The regulations applicable to this analysis are summarized in Appendix E.

The evaluation provided in this chapter is based upon a technical transportation study prepared for the Project, provided in Appendix S.1 (AECOM 2019).

## 3.15.2 Regional and Local Environmental Setting

Because the Project site is located in a remote area, all materials would be brought to the site from long distances and personnel would travel from surrounding communities within Riverside County, such as Blythe and Indio, and potentially from regions of Imperial and Los Angeles Counties and towns in Arizona, such as Quartzsite and Ehrenberg. All Project-related traffic would use Interstate 10 (I-10) for regional travel. The study area for the traffic analysis is defined as the roadway circulation system leading to and from I-10, Wiley's Well Road, and Powerline Road toward the Project site. There are no designated bicycle facilities or sidewalks/trails located on or adjacent to any of the roadways serving the Project site.

### 3.15.2.1 Project Access

Regional access to the site from I-10 is through the interchange with Wiley's Well Road. I-10 is a four-lane, east-west interstate freeway located north of the Project site; it is under the operational jurisdiction of the California Department of Transportation (Caltrans). The posted speed limit on the freeway near in Project vicinity is 70 miles per hour. Trucks comprise approximately 38 percent of traffic on I-10 (Caltrans 2017b). Local access to the Project site is provided by Wiley's Well Road and Powerline Road, which are low-volume roads that serve low-intensity uses such as the nearby prisons and transmission facilities. These paved, two-lane roads. The proposed Project components would be accessed from Powerline Road, which traverses both public and private lands.

#### *Existing Traffic Volumes and Levels of Service*

The level of service (LOS) is a qualitative measure of operational conditions on a roadway or at an intersection, such as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. These factors then are converted to a letter grade identifying operating conditions and expressed as "LOS A" (best operating conditions characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability) to "LOS F" (worst operating conditions characterized by forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions) (Transportation Research Board 2000).[1]

**Study Area Roadways**

Table 3.15-1 provides existing average daily traffic volumes (ADT) and LOS for I-10, Wiley's Well Road, and Powerline Road that would be used for indirect access to the Project site. As indicated below, existing traffic conditions along these facilities in the Project area are characterized as LOS A or LOS B. ADT counts for the two local roadways were collected on May 25, 2017, while ADTs on I-10 were provided by Caltrans (Caltrans 2017a).

[1] This manual is a common guide used for computing the capacity and quality of service of various highway facilities, including freeways, arterial roads, signalized and unsignalized intersections and the effects of mass transit, pedestrians, and bicycles on the performance of these systems.

**TABLE 3.15-1**
**EXISTING ROADWAY LEVEL OF SERVICE**

| Roadway/Segment | Existing Conditions | | | | |
|---|---|---|---|---|---|
| | Cross-section Classification | ADT | Roadway Capacity | Truck Percent | LOS |
| I-10, west of Wiley's Well Road[a] | 4-lane freeway | 24,200 | 68,900 | 38% | B |
| I-10, east of Wiley's Well Road[a] | 4-lane freeway | 26,000 | 68,900 | 38% | B |
| Wiley's Well Road, between I-10 WB Ramps and I-10 EB Ramps[b] | 2-lane undivided | 1,754 | 11,700 | 14% | A |
| Wiley's Well Road, between I-10 EB Ramps and Powerline Road[b] | 2-lane undivided | 2,177 | 11,700 | 7% | A |
| Powerline Road, east of Wiley's Well Road[b] | 2-lane undivided | 37 | 11,700 | 8% | A |

NOTES:
a LOS based on Highway Capacity Software Basic Freeway Segment analysis.
b LOS based on Highway Capacity Software Two-Lane Segment analysis.

SOURCES: AECOM 2019; Caltrans 2017a; Riverside County 2003.

### Study Area Intersections

Table 3.15-2 provides existing intersection delay and LOS results for the three intersections that would be used to access the Project site from local and regional transportation facilities. Traffic counts for the three study area intersections were collected on Thursday, May 25, 2017 and were used to determine existing traffic operating conditions. As indicated below, existing traffic operating conditions at these intersections are characterized as LOS A or LOS B during the AM and PM peak hours of traffic. Detailed count data and LOS calculation worksheets are provided in Appendix S.1.

**TABLE 3.15-2**
**EXISTING INTERSECTION LEVEL OF SERVICE**

| Intersection | Existing Conditions | | | |
|---|---|---|---|---|
| | AM Peak Hour | | PM Peak Hour | |
| | LOS | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) |
| Wiley's Well Road/I-10 WB Ramps | B | 10.1 | A | 8.6 |
| Wiley's Well Road/I-10 EB Ramps | B | 10.2 | B | 11.1 |
| Wiley's Well Road/Powerline Road | A | 0.00 | A | 0.00 |

NOTE: sec/veh = seconds per vehicle
SOURCE: AECOM 2019.

## 3.15.2.2 Public Transportation

### *Blythe Airport*

The nearest airport facility to the Project site is the Blythe Airport. The Blythe Airport is a public general aviation facility, located in the community of Mesa Verde approximately 6 miles northeast of the Project site. The airport has been open to general aviation since 1940. Blythe Airport has two operating runways. As of February 2018, an average of 69 flights per day operate at the airport (Airnav.com 2019).

### *Palo Verde Valley Transit Agency*

The Palo Verde Valley Transit Agency (PVVTA) operates six public transit routes in Eastern Riverside County serving the city of Blythe and Unincorporated County Areas of the Palo Verde Valley. The Red Route (Line 3) runs along Wiley's Well Road approximately 3 miles west of the Project site, and provides access between downtown Blythe and the Chuckawalla and Ironwood prison facilities. It operates on weekdays only, and runs westbound three time per day in the early morning and eastbound three times per day in the afternoon (PVVTA 2018).

## 3.15.3 Analytical Methodology

The traffic analyses conducted for this study were performed in accordance with County of Riverside traffic impact analysis guidelines and the Riverside County Congestion Management Program (CMP) requirements. This analysis focuses on potential impacts of the construction, operation, maintenance, and decommissioning of the Project and alternatives on the surrounding transportation systems and roadways. Impacts on local transportation systems are evaluated based on LOS determinations, which is a generally accepted measure used by traffic engineers, planners, and decision-makers to describe and quantify the congestion level on a particular roadway or intersection based on specific characteristics of traffic flow on designated sections of roadway during a typical day.

### 3.15.3.1 Riverside County Level of Service Standard

The County has designated minimum target LOS for the review of development proposals in the unincorporated areas of the County. According to Policy C 2.1 of the County of Riverside General Plan, the County's minimum standard is LOS C for all roadways and intersections not located within the boundaries of an Area Plan (with exceptions). The project site is not located within the boundaries of an Area Plan and, therefore, the LOS C standard would apply.

### 3.15.3.2 State Highway Level of Service Standard

According to the Caltrans Guide for the Preparation of Traffic Impact Studies, "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway Facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the target LOS. If an existing state highway facility is operating at less than the appropriate target LOS, the existing LOS should be maintained."

### 3.15.3.3 CMP Level of Service Standard

According to the Riverside County Transportation Commission (RCTC), 2011 CMP, the minimum traffic standard of LOS E applies to I-10 in the Project study area. A CMP significant traffic impact would occur if:

- Pre-Project (Base) LOS A, B, C, and D becomes LOS E or F with Project.
- Pre-Project (Base) LOS E becomes LOS F with Project.

These standards are consistent with the standards provided in the County of Riverside General Plan Circulation Element.

## 3.15.4 Direct and Indirect Effects

### 3.15.4.1 Alternative A: Proposed Action

#### *Construction*

Project construction would last 24 consecutive months, beginning in late 2020 and ending in 2022. Construction generally would occur between 7 A.M. and 7 P.M., Monday through Friday for up to a maximum of 8 hours per day, with hourly peaks occurring during the beginning and end of construction worker shifts. Weekend construction work is not expected, but may occur on occasion. Some work may occur outside these hours to address urgent situations, avoid adverse weather conditions including high summer temperatures, or perform work on active arrays after sunset. Project components would not cross any public roadways. Thus, no temporary or permanent closure of any travel lanes along I-10 or Wiley's Well Road would be required. However, short-term closures of Powerline Road between Wiley's Well Road and the CRS access road could be required during construction to allow work within the roadway, or for safety while moving large equipment and materials. In that event, public roadway users could use open routes MM712 and MM637 instead, which are located approximately 1.3 miles north of and roughly parallel to Powerline Road, and are closer to I-10 than Powerline Road. Public notification would be made prior to the closure, but public roadway users of Powerline Road who were unaware of the notifications could arrive at the closure and need to turn back to the nearest alternate route. Mitigation Measure REC-1 would require the Applicant to coordinate any closures of Powerline Road with the BLM at least 60 days in advance of a closure, and to ensure adequate signage and alternate route information would be posted at certain route intersections.

The construction staging areas, which would be used to store materials, construction equipment, and vehicles, would be accessed from Powerline Road and would be wholly contained within the Project site; therefore, staging areas would not interfere with study area roadway operations. The analysis of construction traffic considers the trip generation potential of all the construction phases, including overlaps, and it was determined that the worst-case construction condition would occur during a 14-month period when Phases 1 through 3 are anticipated to overlap. An analysis year of 2020 was selected because it coincides with the peak construction traffic period for the assumed worst-case 14-month construction schedule. To account for ambient traffic growth of cumulative development projects that could potentially affect traffic volumes within the Project study area, a 2 percent annual growth rate was applied to existing (2017) traffic counts.

The construction workforce traffic would peak at approximately 320 vehicles (640 one-way trips) per day. This assumes that 25 percent of the 427 maximum number of construction workers would carpool to the Project site. The construction delivery traffic would peak at 72 vehicles (equipment and water delivery trucks) per day; however, to account for the larger size, slower speeds, and limited maneuverability of large trucks, the construction delivery traffic was adjusted using a Passenger Car Equivalent (PCE) factor of 3.0. The PCE of 72 daily delivery vehicle round trips is 216 trips, or 432 daily one-way trips. Table 3.15-3 presents the estimated peak month trip generation. As shown, the Project would generate a maximum of 1,072 daily vehicle trips. Further detail is provided in Appendix S.1.

**TABLE 3.15-3**
**ESTIMATED PEAK-MONTH CONSTRUCTION TRIP GENERATION**

| Trip Type | Number of Vehicles | Daily One-Way Trips |
|---|---|---|
| Workers (staff and craft) | 320 | 640 |
| Module Deliveries | 10 | 60 |
| Foundation Deliveries | 10 | 60 |
| Water Truck Deliveries | 52 | 312 |
| **Total Construction Traffic** | **392** | **1,072** |
| SOURCE: AECOM 2019 | | |

Haul trucks would use dedicated truck routes within each jurisdiction, and would comply with all Caltrans permitting requirements when any truck loads are oversize. As described in Appendix E Applicable Regulations, Caltrans has the discretionary authority under California Vehicle Code Section 35780 to issue special permits for the movement of vehicles and/or loads exceeding statutory limitations on the size, weight, and loading of vehicles contained in the California Vehicle Code. The California Highway Patrol is notified about transportation of oversize and/or overweight loads. With the addition of Project-generated construction traffic occurring during both the AM and PM peak hours as well as on a daily basis, and ambient growth in traffic anticipated to occur by 2020, the three study area intersections and five study area roadway segments would mostly continue to operate at an LOS A or LOS B in 2020, similar to existing conditions. The exception is at the intersection of Wiley's Well Road/Power Line Road, which would operate at LOS C. Although project-generated construction traffic would result in a change in LOS at one of the study locations, the intersection would still operate at an acceptable LOS (LOS C or better) according to the County's standard. Detailed LOS calculations are provided in Appendix S.1. Although construction traffic would be more noticeable on Wiley's Well Road and Powerline Road than on I-10, the increased traffic volumes would not cause study area intersections or roadway segments to operate at an unacceptable LOS according to the local standards stated above in Section 3.15.3, Analytical Methodology. Because increases in traffic associated with the Project construction activities would not be substantial relative to existing or 2020 conditions, the Project would not affect traffic conditions over the course of a workday. As noted previously in Section 3.15.2.2, Public Transportation, there is very limited transit service at or near the Project site, and there are no bicycle or pedestrian facilities adjacent to or within the Project site. Furthermore, no such facilities or operations are currently planned to occur at or within the Project site. Therefore, the traffic increases during construction would not result in any disruption to transit service or bicycle and pedestrian facilities.

#### *Operation*

The operations and maintenance workforce would be up to 10 full-time workers and up to 40 temporary staff resulting in a maximum of 50 staff on-site on limited occurrences. Operational traffic would be minimal and would not create any substantial delay or change in LOS. Based on the low anticipated employee trips (10 daily round trips) and deliveries (up to 10 daily round trips), no significant traffic impact would occur during operations.

#### *Decommissioning*

As described in Section 2.4.5, it is estimated that decommissioning activities would require 10,000 truck trips and a workforce of 320 workers, and would take 17 months to complete. Although the distribution of truck trips per day during decommissioning is not known at this point in time, such activities likely would be similar to construction activities described above.[2] Therefore, the analysis assumes that decommissioning would require up to 320 worker vehicles and up to 72 trucks per day, generating up to 640 daily one-way worker trips and up to 432 daily one-way PCE trips. Similar to Project construction, decommissioning worker trips would peak during the beginning and end of work shifts, while truck trips would be spread throughout the course of the day. Because traffic conditions are likely to change over the life of the Project, the conditions on I-10 at the time of closure and decommissioning are unknown and estimating these conditions would be speculative. However, the decommissioning-related traffic would have the same contribution to traffic conditions as during peak construction. The LOS of traffic flow along I-10 in the Project area could be temporarily degraded if traffic conditions were to worsen substantially during the Project's operating lifetime, but would likely remain at LOS A or LOS B as described above for Project construction. Therefore, roadway operating conditions would not fall below the acceptable LOS E, and temporary decommissioning effects would not result in permanent LOS degradation. Therefore, I-10 is expected to operate at acceptable conditions during decommissioning. Furthermore, the increase in vehicle trips by the workforce during decommissioning activities is not expected result in any adverse effects along the I-10 off-ramps during the morning and afternoon peak commute periods. Similar to construction, decommissioning may require temporary closure(s) of Powerline Road between Wiley's Well Road and the CRS access road to allow work within the roadway, or for safety while moving large equipment and materials. Alternate routes for public roadway users would be identified pursuant to Mitigation Measure REC-1 to ensure that adequate signage and alternate route information would be posted at certain route intersections would not require closure of any travel lanes and therefore would not reduce the roadway capacity on roads that provide access to the work sites. In addition, the short-term traffic increases during Project decommissioning activities, which would occur primarily on I-10, Wiley's Well Road, and Powerline Road, would not adversely affect any transit service or bicycle and pedestrian facilities, or users of such facilities.

### 3.15.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.15-4 summarizes the change in traffic impacts under Alternative B, by Design Element.

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2 The Project Owner would be required to provide this information in the required analysis for the Decommissioning Plan, which would be provided prior to decommissioning the Project as approved by the BLM authorized officer.

**TABLE 3.15-4**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Traffic | Minor reduction | Minor reduction | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

Incorporation of the Design Elements under Alternative B is not expected to materially alter the construction workforce or schedule. However, the reduction in ground disturbance associated with DE-1 and DE-2 would result in a reduction in water consumption (60 percent of that assumed for Alternative A), thereby reducing the number of construction-period water delivery truck trips by approximately 125 daily one-way trips, a reduction of about 11 percent of total daily trips. Therefore, construction traffic for Alternative B would be slightly less than that of Alternative A. Staffing requirements during operations and maintenance activities for Alternative B would be largely similar to the workforce described for Alternative A. Therefore, operations and maintenance traffic is anticipated to be same as Alternative A. Vehicle trips generated by decommissioning activities would be the same for Alternative B as for Alternative A. Overall, Alternative B would have a minor reduction in transportation and public access impacts compared to Alternative A.

### 3.15.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Construction methods, workforce, and construction durations for Alternative C would be the same as described for Alternative A. However, the reduction in ground disturbance associated with Alternative C (82 percent of that assumed for Alternative A) would require less water for dust suppression, thereby reducing the number of construction-period water delivery truck trips by approximately 56 daily one-way PCE trips, a reduction of about 5 percent of total daily trips. Therefore, construction traffic for Alternative C would be comparable to that of Alternative A. Full-time employee projection for operations would be the same as described under Alternative A, resulting in operations and maintenance traffic similar to that of Alternative A. Vehicle trips generated by decommissioning activities would be the same for Alternative C as for Alternative A. Overall, Alternative B would approximately the same transportation and public access impacts as Alternative A.

### 3.15.4.4 Alternative D: No Plan Amendment/No Action/No Project

Under the No Plan Amendment/No Action/No Project Alternative, no development would occur. As such, no Project-related changes would occur, and the existing environmental setting described in Section 3.15.2 would not be affected by Project-related activities; no impact would occur.

## 3.15.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on Transportation and Public Access if it would:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

b) Conflict or be inconsistent with the CEQA Guidelines Section 15064.3, subdivision (b).

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

d) Result in inadequate emergency access.

### 3.15.5.1 Alternative A: Proposed Action

**Impact 3.15.5a: Would the Project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

With the addition of Project-generated construction traffic and ambient growth, the three study area intersections and five study area roadway segments would continue to operate at an LOS A or LOS B in 2020, similar to existing conditions. In addition, the increase in traffic generated by the Project during construction, operation, maintenance, and decommissioning activities would not result in temporary or permanent changes to the performance of any transit, bicycle, and pedestrian facilities in proximity to the Project site. Therefore, the addition of Project-related construction, operation, maintenance, and decommissioning traffic would not affect the surrounding circulation system and would result in a less-than-significant impact. No mitigation measures would be required.

The Project site is located within Riverside County, which has established LOS standards implemented by the RCTC, the County's CMA. The CMA has LOS standards and a documented CMP that is intended to regulate long-term traffic impacts due to existing and future development, and such standards would not apply to temporary construction activities related to the Project (24 months). However, the Project would have a life-span of 30 years, followed by a decommissioning period, and would not be considered to have long-term traffic effects to I-10 and nearby roadways. As discussed above, the construction and decommissioning activities associated with the Project would generate the highest amount of traffic; however, the increase in traffic from these activities would be temporary, each occurring within a 24-month period. Furthermore, as described in Section 3.15.4.1, the increase in traffic from construction, operation, maintenance, and decommissioning activities would not result in any degradation in levels of service along I-10. Because the construction, operation, maintenance, and decommissioning of the Project would not result in any long-term impacts on CMP facilities, the impacts to the CMP roadway network and established programs would be less than significant. No mitigation measures would be required.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.15.5b: Would the Project conflict with or be inconsistent with the CEQA Guidelines section 15064.3, subdivision (b)? (Less than significant)**

#### Construction, Operation, and Decommissioning

In accordance with Senate Bill (SB) 743, the new CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shift the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. The Riverside County is currently engaged in this process and has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, delay and LOS are the measures used in this analysis to determine the significance of transportation impacts (see impact discussion a, above). As such, no further analysis is required and no impacts related to CEQA Guidelines section 15064.3, subdivision (b) would occur.

### Mitigation Measures

None required.

### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.15.5c: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (*Less than significant*)**

### Construction, Operation, and Decommissioning

The Project would not change the existing roadway network. Truck trips associated with the construction and decommissioning of the proposed facilities on the Project site would temporarily change the mix of vehicle types on area roads. Traffic safety hazards could occur due to: (1) conflicts where construction vehicles access a public right-of-way from the Project area; (2) conflicts where road width is narrowed; or (3) increased truck traffic in general (and their slower speeds and wider turning radii) during construction, operation, maintenance, and decommissioning. As described with respect to CEQA significance criterion a, the increase in weekday peak-hour traffic volumes resulting from construction and decommissioning-related traffic generated by the Project would not be substantial relative to the background traffic volumes on roads used to access the site. In addition, because the Project would include designated laydown and staging areas for worker vehicles and equipment, and because construction- and decommissioning-related activities would generally occur outside typical weekday peak traffic periods, potential adverse traffic safety hazards on adjacent roadways due to Project-related activities and vehicle trips would be reduced to a less-than-significant level.

### Mitigation Measures

None required.

### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.15.5d: Would the Project result in inadequate emergency access? (*Less than significant*)**

### Construction, Operation, and Decommissioning

Construction, operation and maintenance, and decommissioning activities would occur along specific corridors and easements within the Project area. No roadways would be closed during such activities. In addition, drivers of vehicles traveling behind a slow-moving heavy truck would be slowed, but rules of the road dictate that emergency vehicles have the right-of-way, and Project-related activities would not substantially impair emergency access. Furthermore, as described above in Section 3.15.2.2, traffic volumes on study area roadways that would be used by Project-generated construction traffic are relatively low and conditions are uncongested; therefore, access by emergency responders would not be hindered. This impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not Applicable. No mitigation is required.

### 3.15.5.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Incorporation of the Design Elements under Alternative B is not expected to materially alter the construction schedule or workforce, or alter the proposed Project driveway and access from Powerline Road. Impacts caused by Alternative B would be the approximately same to that of Alternative A with respect to conflicting with applicable transportation policies and congestion management plans, increasing transportation hazards, and resulting in inadequate emergency access.

### 3.15.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C is not expected to materially alter the construction schedule or workforce, or alter the proposed Project driveway and access from Powerline Road. Impacts for Alternative C would be approximately the same to that of Alternative A with respect to conflicting with applicable transportation policies and congestion management plans, increasing transportation hazards, and resulting in inadequate emergency access.

### 3.15.5.4 Alternative D: No Plan Amendment/No Action/No Project

Under the No Plan Amendment/No Action/No Project Alternative, no development would occur. As such, it would not result in any new vehicle or truck trips to the Project site, or in changes at or near the Project site that could affect existing transportation systems, Alternative D would result in no impact on transportation.

## 3.15.6 Cumulative Effects

### 3.15.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

This analysis of cumulative transportation and traffic impacts focuses on the roadway segments that would be affected by the Project (e.g., within the I-10 corridor in the Project vicinity), because this is the only geographic area where the transportation and traffic impacts of the Project could combine with such impacts caused by past, present, and reasonably foreseeable future projects. Therefore, the geographic scope for cumulative impacts consists of the immediate vicinity of the proposed Project site where other projects might contribute traffic to the same segments of I-10. The Project would contribute to cumulative traffic conditions within the relevant geographic area during construction, operation, maintenance, and decommissioning.

The existing conditions (as described in Section 3.15.2, Regional and Local Environmental Setting) reflect the ongoing cumulative contributions to transportation and traffic conditions resulting from past projects. This analysis considers the effects of the Project and other alternatives in combination with the effects of these past projects as well as other present and reasonably foreseeable future projects.

Twenty-seven of the projects listed in Table 3.1-1 in Section 3.1.6, Cumulative Scenario, have been approved and environmentally cleared for construction; however, only five projects are currently under construction and would be operational by Year 2020, which is when the Project is scheduled to begin construction (late 2020), e.g., Units 3 and 4 of the Modified Blythe Solar Power Project (8 miles northeast of the Project site) and four residential and commercial developments in various locations in the city of Blythe (located approximately 15 miles east of the Project site). Once implemented, these projects would contribute to traffic conditions on I-10 during the Project's construction. It is assumed that the remaining cumulative projects would come online and contribute to traffic conditions along I-10 during the latter stages of Project construction, or during its operation, maintenance, or decommissioning.

Cumulative impacts would be greatest if the peak construction period of all of the projects listed in Table 3.1-1 overlapped. Although this worst-case scenario is unlikely, even if it were to occur, the LOS along I-10 would not degrade to unacceptable service levels (worse than LOS E, which is the allowable limit in the RCTC CMP) considering existing capacity on the facility. As shown in Table 3.15-1, the segments of I-10 near the Project site have a capacity to serve approximately 68,900 vehicles per direction per day, and they currently serve between 24,200 and 26,000 vehicles per direction per day, which equates to LOS B conditions. Although a quantitative analysis was not conducted to determine the total number of vehicle trips that would be generated by the cumulative projects, it can be concluded based on the number, nature, and size of the cumulative projects that there is ample capacity on I-10 to accommodate cumulative traffic without operations falling below LOS E. Additionally, as stated above, Project-generated traffic during any phase would not be substantial enough to degrade freeway LOS to unacceptable conditions.

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 would not likely exceed the capacity of I-10, which in this area has two lanes in both directions to accommodate the anticipated increase in traffic accessing or exiting the freeway while maintaining adequate traffic flow along the freeway mainline. Therefore, no significant cumulative impact would occur during Project construction.

Based on the workforce required for ongoing facility maintenance and repairs (see Chapter 2, Project and Alternatives), a maximum of 50 daily round trips would be generated by the Project for brief periods of time up to four times a year once the facilities have been constructed and commissioned. The current capacity of I-10 is sufficient to carry this added traffic without substantial, adverse effects. Therefore, no reasonably foreseeable significant cumulative impact would occur during Project operation.

The Project's contribution to cumulative traffic conditions during decommissioning and restoration is unknown, as are the number and proximity of cumulative projects that will be developed in the area within the next 30 years and the LOS of I-10 at that time. For purposes of this analysis, it is assumed that the Project's contribution to cumulative conditions at that time would be comparable to its contribution during Project construction.

### 3.15.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

There would be no substantial difference in transportation and public access effects between Alternative A and Alternative B; therefore, the cumulative analysis for Alternative A is applicable to Alternative B.

### 3.15.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

There would be no substantial difference in transportation and public access effects between Alternative C and Alternative A; therefore, the cumulative analysis for Alternative A is applicable to Alternative C.

### 3.15.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no development would occur, and the existing environmental setting would be maintained. As such, the Project would not be implemented and no cumulative impacts would occur.

## 3.15.7 Residual Effects

Because no mitigation measures are recommended, impacts on transportation would be the same as discussed in Section 3.15.4.

# 3.16 Utilities and Public Services

## 3.16.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning utilities and public services. The regulations applicable to this analysis are summarized in Appendix E. Because no connection to a wastewater treatment provider exists or is proposed as part of the Project, wastewater treatment facilities are not discussed. This section also describes the existing public services in the Project vicinity, including fire and public protection, schools, parks, and other public facilities such as libraries and hospitals. The information used for this analysis is based on review of agency websites, applicable plans and policies, and maps and satellite imagery of the Project area.

## 3.16.2 Regional and Local Environmental Setting

**Water Supply and Management.** The Project site is located outside the service area of the nearest water provider, Palo Verde Irrigation District (PVID), but could source water from PVID if water is delivered to the site by trucks. Groundwater availability was evaluated through a Water Supply Assessment (WSA) and a numerical groundwater model (discussed in Section 3.18, Water Resources). The WSA (AECOM 2018a) is provided in Appendix U.2. Most of the Project site overlies the Chuckwalla Valley Groundwater Basin (CVGB). The eastern portion of the Project site, and an existing off-site well located 4 miles northeast of the Project site that may be used for Project water supply, are located above the Palo Verde Mesa Groundwater Basin (PVMGB) (AECOM 2018a). Groundwater in the basin is pumped for residential and agricultural use, though most agricultural water is sourced from the Colorado River. Water quality testing indicates that groundwater within the CVGB and PVMGB is not suitable for domestic supply without treatment (AECOM 2018a).

**Stormwater Management.** No stormwater facilities are located on or in the immediate vicinity of the Project site (see Section 3.18, Water Resources, for a description of modeled on-site stormwater flows).

**Solid Waste Management.** The Project site is located within the service area of the Riverside County Department of Waste Resources (RCDWR), which operates six landfills, contracts with a private landfill, and administers several transfer station leases (RCDWR 2018a). Blythe Landfill is closest to the Project site (14 miles). The next closest landfills are Desert Center Landfill (34 miles), Mecca II Landfill (66 miles), and Oasis Landfill (72 miles). Riverside County has a minimum of 15 years of capacity for future landfill disposal (RCDWR 2018a). The Blythe Landfill has a permitted daily capacity of 400 tons, a total estimated remaining permitted capacity of 4 million cubic yards (cy), an anticipated closure date of August 2047 (CalRecycle 2018a), and accepted an average of 85 tons per day in 2017 (RCDWR 2018b).

**Fire protection.** The BLM is responsible for wildland fire protection, as described in Section 3.19, Wildland Fire. However, Riverside County Fire Department (RCFD) would provide immediate response to wildland fires and structure fires at the Project. The nearest fire station to the Project site is RCFD Station #45, located at the Blythe Air Base at 17280 W. Hobson Way in Blythe (RCFD 2018a), approximately 11 road miles to the east. The RCFD is staffed with approximately 1,145 career and 280 volunteer reserve firefighters (RCFD 2011). The RCFD has the versatility to respond to urban and wildland emergency conditions with an inventory that includes structural engines, rural engines, brush engines, telesquirts, trucks, paramedic units, a helicopter, a hazardous materials unit, incident command units, water tenders, fire crew vehicles, mobile communications centers, breathing support units, lighting units, power supply units, fire dozers, mobile training vans, and mobile emergency feeding units (RCFD 2018a; 2018c). The RCFD determines station location and its resulting coverage primarily based on departmental policy for acceptable response times by land use category. A 2016 report commissioned by RCFD recommended a total response time goal of 14 minutes and 50 seconds for 80 percent of calls for emergency fire response in "outlying" areas such as the Project site, with travel time accounting for 12 minutes and 30 seconds of this total (TriData LLC 2016). The report notes that the overall call processing time at RCFD was more than 2 minutes over the national standard for fire incidents in 2015, contributing to overall response time.

**Riverside County Sheriff's Department.** The Project would be served by the Riverside County Sheriff's Department (RCSD), Colorado River Station in Blythe. The RCSD has more than 4,000 employees, including 2,300 sworn personnel (RCSD 2018c; Riverside County 2014). The RCSD has established criteria for its staffing requirements in unincorporated areas of the County: one sworn officer per 1,000 persons in the service population (Riverside County 2003). The current unincorporated and contract agencies service population is 1,376,778, giving the department a current service ratio of one sworn officer per 600 persons (CA DOF 2017).

**Blythe Police Department**. While the Project site is located in unincorporated Riverside County such that the responsibility for law enforcement at the site lies with the RCSD as discussed above, most permanent project employees would most likely reside in the City of Blythe and generate a demand for law enforcement from the Blythe Police Department (BPD). The BPD station is located approximately 12 miles from the Project site in Blythe. BPD's service population is 19,660 people (CA DOF 2017). The BPD employs 25 sworn officers including one chief, one captain, and one lieutenant giving it a service ratio of one sworn officer per 786 people. BPD does not maintain a standard for emergency response times; however, officers respond immediately to all emergency calls and response times range from 1 to 10 minutes (City of Blythe 2007).

**Schools.** The Project site is located within the Palo Verde Unified School District (PVUSD). PVUSD serves the Project site, Blythe, and other remote areas of Riverside County. The PVUSD consists of three elementary schools (K–8), one high school (9–12), and one continuation school (11–12) (PVUSD 2018). The total K–8 enrollment is just over 3,000 students, and the total high school enrollment is about 870 students (California Department of Education and PVUSD 2018).

**Other Public Facilities.** No public facilities are located on or adjacent to the Project site. The closest hospital to the Project site is the Palo Verde Hospital (12 miles away). Riverside County operates the Riverside University Health System Medical Center (in Moreno Valley, 150 miles away), 10 community health centers, and several primary and specialty clinics throughout Riverside County (Riverside University Health System 2018). Parks and other recreational facilities are described in Section 3.12, Recreation and Public Access.

## 3.16.3 Analytical Methodology

Potential impacts related to solid waste are evaluated in terms of landfill capacity. Wastewater is evaluated in terms of adequate treatment and disposal capabilities. A WSA (AECOM 2018a) and Water Demand Analysis (AECOM 2018b) were completed to evaluate water supply. The water demand analysis is provided in Appendix U.1. A Phase C Hydrology Study (Westwood 2018) was also prepared and is provided in Appendix U.3. The Project water demand is presented in Chapter 2, Project and Alternatives, and potential impacts are described in more detail in Section 3.18, Water Resources.

Impacts to fire protection and law enforcement are assessed in terms of local fire and sheriff department capabilities and performance goals. Impacts to schools and other public facilities are assessed in terms of the capacity of these facilities to serve the populations and meet relevant service goals and policies set forth in planning and policy documents.

## 3.16.4 Direct and Indirect Effects

### 3.16.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

**Wastewater.** Project construction and decommissioning would generate wastewater through use of portable toilets. Portable toilets would be used in accordance with Riverside County Board of Supervisors Resolution 91-474, which regulates the disposal of waste from portable toilets.

Project operation would not require any connections to local or regional wastewater treatment systems. Employee-generated wastewater would be contained by up to two small, aboveground, self-contained, 2,000-gallon portable sanitary waste facilities that would be installed in accordance with state requirements and emptied as needed by a contracted wastewater service. Module washing would not generate wastewater as water would evaporate or be absorbed into the ground. No chemical cleaners would be used for module washing (Sonoran West Solar Holdings 2019).

**Stormwater.** The Project would introduce new impervious surfaces, which could increase the rate and frequency of runoff. However, any increases in the downstream flow rates would be minor. This is because, while the entirety of the Project site would be graded under Alternative A, thereby potentially affecting the existing drainage pattern, drainage control features (e.g., diversion structures, vegetated swales, detention basins, etc.) would be incorporated to limit downstream flow, erosion, and other adverse effects associated with stormwater runoff (see Section 3.18, Water Resources). In addition, the Project would include implementation of an SWPPP, which would include best management practices in accordance with the National Pollution Discharge Elimination System General Construction Permit. The Project SWPPP would include measures to manage stormwater runoff and minimize changes to existing drainage patterns to ensure the Project would not increase discharge from the site during a 100-year storm event. Decommissioning of the Project would involve removal and/or abandonment in place of the proposed facilities, which would not affect operation or function of natural stormwater drainage channels in the vicinity of the Project site. Therefore, Project implementation would not result in adverse effects on stormwater drainage.

Stormwater runoff from the Project site could include contaminants and sediment during construction and operation. The SWPPP and Mitigation Measure BIO-14 would ensure proper treatment of the stormwater during project construction and operation, respectively, using site-specific best management practices (BMPs) and sediment retention. Adherence to these requirements would minimize potential for water quality degradation from stormwater runoff during construction and operation. Decommissioning would involve removal and/or abandonment in place of all proposed water treatment, wastewater treatment, and stormwater facilities in compliance with applicable requirements of the Colorado River RWQCB; therefore, Project implementation would not result in adverse effects on the water quality of stormwater runoff from the Project site.

**Water Supply.** Up to 1,000 acre-feet (AF) of water would be required during the 2-year construction phase for dust control, temporary construction trailers, and fire safety requirements. Up to 660 AF of water would be required for operation (22 acre-feet per year (AFY) for 30 years) for module washing and maintenance, and substation restrooms. Similar to construction, decommissioning and site reclamation over approximately 17 months could result in approximately 1,000 AF of water use. This amounts to a total water demand of 2,660 AF for construction (1,000 AF), operation (660 AF), and decommissioning (1,000 AF).

Project water would be supplied from either a new on-site well that would be constructed as part of the Project or an existing off-site well located approximately 4 miles northeast of the Project in the PVMGB, or would be trucked in via an off-site water purveyor, or by some combination of these sources. The total groundwater storage capacity of the CVGB and PVMGB combined is approximately 15,940,000 AF. Total recharge in the CVGB and PVMGB is estimated to be 8,498 AFY and neither basin is in overdraft conditions (AECOM 2018b). Project implementation would require a total of approximately 2,660 AF of water. This volume of water represents about 0.019 percent of the total estimated 15,940,000 AF storage volume. The heaviest water use would occur during construction, and would be about 8 percent of the recharge capacity. Mitigation Measures WAT-1 and WAT-2, which would require implementation of a Colorado River Water Supply Plan and Groundwater Monitoring and Reporting Plan, respectively, would ensure Colorado River and groundwater supplies are monitored and not overdrawn. Therefore, impacts on water supply would be minor.

**Solid Waste.** The Project would generate solid waste during construction, operation, maintenance, and decommissioning activities which would be handled in accordance with applicable regulatory requirements. Project construction is expected to generate 7,035 cy of nonhazardous construction waste (e.g., wood, glass, metal, etc.), 100 cy of solid and approximately 2,000 gallons of liquid hazardous waste, and approximately 40 pounds of spent batteries from construction machinery (Recurrent 2019). Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. It is anticipated that at least 20 percent of construction waste would be recyclable, and 50 percent of those materials would be recycled (see Chapter 2, Project and Alternatives). Wooden construction waste (such as wood from pallets) would be sold, recycled, or chipped and composted off-site. In addition, Mitigation Measure PSU-1 requires the preparation and implementation of a Waste Recycling Plan (WRP) to preserve landfill capacity and support efforts to recycle, reuse, and/or reduce the amount of recyclable material going to the landfill. Other compostable materials, such as vegetation, might also be composted off-site. Non-recyclable, nonhazardous solid waste materials would be disposed of at the Blythe Landfill in accordance with state and local regulations, including but not limited to 22 California Code of Regulations (CCR) Division 4.5 (disposal/recycling of hazardous and universal wastes) and Riverside County's Countywide Integrated Waste Management Plan (CIWMP). Hazardous waste would be recycled and/or disposed of at a permitted facility. Batteries would be recycled or disposed of off-site at a Universal Waste Destination Facility. All solid waste generated on site would be removed at least once per week by the approved franchise hauler.

Blythe Landfill has an available daily capacity of 315 tons and a total remaining capacity of approximately 4 million cy (CalRecycle 2018a). Disposing of 7,035 cy (8,442 tons) of nonhazardous construction waste at Blythe Landfill would have a negligible effect on the facility's total remaining capacity. This landfill has sufficient total capacity to continue to provide solid waste disposal through 2047. Project operation would produce minimal waste, generated by 10 full-time employees, and would be primarily limited to office waste products. Solid waste generated during operations would be disposed of off-site by appropriate contractors. Therefore, solid waste resulting from the Project construction, operation, and maintenance would not result in adverse effects.

Decommissioning would result in removal of aboveground structures and underground equipment. The solid waste flows from decommissioning would include concrete, metal, plastics, photovoltaic panels, battery or flywheel storage components, and wood. The solar modules also could be refurbished to extend their estimated 30-year lifespan and transported to another solar electrical generating facility. All materials would be recycled to the extent feasible; materials not recycled would be disposed in a landfill. Riverside County is required to demonstrate annually that at least 15 years of capacity remains in landfills throughout the County, or to create and implement a plan to site additional capacity to achieve and continue to meet the 15-year capacity requirement. It is anticipated that the County would have at least 15 years of remaining landfill capacity at the time of decommissioning, with ample capacity for the waste materials form the Project, and therefore no adverse effects would occur.

The disposal of broken or degraded solar panels during all phases of the Project could require special handling or disposal practices and would be guided by the HMBP described in Section 3.8, Hazards and Hazardous Materials. The Project Applicant would provide the HMBP to all on-site contractors and would ensure a copy is available at the Project site at all times. Disposal and waste handling for all waste flows generated on-site during Project construction, operation and maintenance, and decommissioning would be completed in accordance with all applicable laws and policies, and no adverse effects would occur.

Hazardous wastes generated during construction, operation, and decommissioning would be recycled to the extent possible and practical. The accumulated wastes would then be properly manifested, transported, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal firms in accordance with applicable regulations and standards. Hazardous wastes would likely be transported to one of two available Class I waste facilities: Clean Harbors Buttonwillow Landfill in Kern County and Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and III waste. There is sufficient remaining capacity at these facilities to handle the Project's hazardous wastes during its operating lifetime; for example, the Kettleman Hills facility had a remaining capacity of 4.9 million cy as of 2015 (Waste Management 2015). In addition to the Class I landfills, there are several commercial liquid hazardous waste treatment and recycling facilities in California that can process project-related hazardous wastes.

**Fire Protection.** The use of personnel, vehicles, materials, and equipment during Project construction, operation, and decommissioning would increase the risk of a fire event at the Project site that would require a response by RCFD. In addition, the introduction and spread of non-native plant species could create a wild fire fuel source at the Project site. However, implementation of Mitigation Measures FIRE-1, which would require implementation of a Fire Safety Plan; BIO-15, which includes provisions for wildfire prevention; and BIO-16, which would reduce the potential to spread non-native plants (see Appendix I.10), would reduce the risk of fire-related events. Travel time from RCFD Fire Station 45 to the Project site would be at least 25 to 30 minutes given the distance and slower travel speeds possible on Project site access roads. While this is greater than the 12 minute 30 second travel time goal described in Section 3.16.2, the RCFD acknowledges that 80 percent compliance with the total response time goal is appropriate in outlying areas. The implementation of the above mitigation would help minimize the potential fire risk, reducing the likelihood that Project-generated incidents would adversely affect the RCFD's ability to maintain an acceptable response and level of service in outlying areas. The Project's wildfire-related impacts are discussed in Section 3.19, Wildland Fire Ecology.

**Public (Police) Protection.** Construction of the Project would bring construction workers to the Project site and surrounding area. Temporary construction-related positions would likely be filled both from the local labor pool in Riverside County and from outside the area. Some temporary workers could move into the service area of the RCSD or BPD from elsewhere. Both agencies' current staff of sworn officers could accommodate the related increase in population because the number of new workers would not substantially alter the current service ratios of either agency. Additionally, the Project would include security measures such as fencing, controlled access, lighting, security personnel, and security cameras to deter criminal activity. Because the operation and maintenance and decommissioning phases would have smaller workforces, the effects of these workers on police service ratios would be reduced compared to the construction phase. Implementation of the Project would not result in the need for new or modified public protection facilities and services to maintain acceptable service ratios or response times. Therefore, adverse effects on public (police) protection would not occur.

**Other Public Facilities.** Since the Project would not result in a significant increase in local population or housing, it would not result in substantial adverse effects to other types of public facilities, such as public libraries, hospitals, or other civic uses, because an increase in population or housing is typically associated with increased demand for public facilities. Therefore, the Project would not adversely affect public services or result in the need for new or modified facilities.

### 3.16.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements that differ from Alternative A (see Section 2.5). Table 3.16-1 summarizes the change in adverse effects on utilities and public services under Alternative B, by Design Element.

**TABLE 3.16-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Wastewater | No change | No change | No change |
| Stormwater pollution | Minor reduction during construction and operations. No change during decommissioning | Minor reduction during construction and operations. No change during decommissioning | Minor reduction during construction and operations. No change during decommissioning |
| Water Supply | Minor reduction during construction. No change during operations and decommissioning | Minor reduction during construction. No change during operations and decommissioning | Minor reduction during construction. No change during operations and decommissioning |
| Solid Waste | No change | No change | No change |
| Fire Protection | Increase | Increase | No change |
| Public Protection | No change | No change | No change |
| Other Public Facilities | No change | No change | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Construction, Operation, and Decommissioning*

Implementation of Alternative B would generally result in similar effects on utilities and service systems as described for Alternative A in Section 3.16.6.1. Alternative B would include approximately the same number of project employees during construction and operation as Alternative A, and thus would generate a similar amount of wastewater. Alternative B would require substantially less grading, trenching, and vegetation removal than the Project, would retain a greater amount of the existing on-site drainage pattern, would include the development of slightly less impervious surfaces, and would include slightly less compacted roads, which together would slightly reduce the amount of stormwater runoff from the Project site. Mitigation Measure BIO-14 (SWPPP and DESC) would also be required under Alternative B. This alternative would require slightly reduced water during construction due to substantially less grading and trenching and thus water needed for dust suppression. Water use during operation and decommissioning would be similar to Alternative A. Mitigation Measures WAT-1 (Groundwater Monitoring, Reporting, and Mitigation Plan) and WAT-2 (Colorado River Water Supply Plan) would still be required to monitor the use of groundwater and Colorado River water. The amount of solid waste generated during implementation of Alternative B would be the same as Alternative A. Thus, Mitigation Measure PSU-1 (Waste Recycling Plan) would also be required under Alternative B. Alternative B would involve a slightly increased fire risk when compared to Alternative A due to the collector cables being placed aboveground, which could present new ignition source (see Section 3.19, Wildland Fire Ecology). However, the effect on the local fire department would be the same as Alternative A with the same response time for fire protection at the Project site. Mitigation Measures FIRE-1 (Fire Safety Plan), BIO-15 (Wildfire Prevention), and BIO-16 (Weed Management) would be required to reduce fire risk and fire impacts under Alternative B. Alternative B would involve the same number of workers during construction, operations and decommissioning as Alternative A. Therefore, impacts on the local sheriff and police departments and other public facilities are expected to be the same as Alternative A.

## 3.16.4.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

The Project effects of Alternative C would be similar to Alternative A, but would occur at reduced levels because the developed area would be smaller. Alternative C would include roughly the same number of project employees during construction and operation as Alternative A, and thus would generate a similar amount of wastewater. The smaller area would result in substantially less grading, trenching, and vegetation removal than Alternative A, would retain a greater amount of the existing on-site drainage pattern, would include the development of slightly less impervious surfaces, and would include slightly less compacted roads, which together would reduce the amount of stormwater runoff from the Project site. The reduced scale of this alternative would require less water during construction (estimated to be 870 AF, approximately 13 percent less than Alternative A) due to substantially less grading and trenching and thus water needed for dust suppression. Alternative C is expected to result in slightly less solid waste generated during construction and decommissioning than Alternative A. Because the number of construction workers is anticipated to be similar to that required for Alternative A, the impacts of Alternative C on fire, police, and other civic services would be expected to be minor. Furthermore, the same mitigation measures would be implemented under Alternative C as for Alternative A to further reduce effects. Mitigation Measure BIO-14 would be required to minimize the effect of wastewater and stormwater impacts. Mitigation Measures WAT-1 and WAT-2 would be required to monitor the use of groundwater and Colorado River water, respectively. Mitigation Measure PSU-1 would be required to manage the recycling of waste materials. Mitigation Measures FIRE-1, BIO-15, and BIO-16 would be required to reduce fire risk and fire impacts.

## 3.16.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, no changes would occur, and the existing environmental setting would be maintained. This alternative would result in no impacts related to utilities and public services as there would be no stormwater, water, or wastewater treatment facilities constructed, no increase in water demand, no generation of solid waste, and no demand on public services.

# 3.16.5 CEQA Significance Thresholds and Determinations

Based on CEQA Guidelines Appendix G, a project would have a significant impact on Utilities and Public Services if it would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

f) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

   i. Fire Protection
   ii. Police Protection
   iii. Schools
   iv. Parks
   v. Other Public Facilities

## 3.16.5.1 Alternative A: Proposed Action

**Impact 3.16.5a: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (*Less than significant with mitigation incorporated*)**

### Construction, Operation, and Decommissioning

The Project would not: (1) connect to the existing local water, sewer, or stormwater drainage systems; (2) relocate or expand existing water, wastewater conveyance/treatment, or stormwater drainage facilities; (3) construct new wastewater treatment/conveyance facilities; or (4) relocate or construct new natural gas facilities. The Project could require on-site stormwater drainage facilities (e.g., bioswales, detention basins, etc.). The primary purpose of the Project is to construct and operate a utility-scale solar electric power facility. The environmental effects from these improvements are subsumed in the environmental analysis in Chapter 3 of this Final EIS and Proposed PA, and no additional significant environmental effects would occur.

Concerning the construction of new telecommunications facilities, Section 3.3, Biological Resources analyzes the potentially significant impacts of proposed facilities that may present collision and/or electrocution hazards for avian species. Facility compliance with the most recent Avian Power Line Interaction Committee (APLIC) design guidelines, as required under Mitigation Measure BIO-32, would reduce avian power line collision and electrocution effects to less than significant with mitigation incorporated.

### Mitigation Measures

Implement Mitigation Measure BIO-32.

### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measure BIO-32.

**Impact 3.16.5b: Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years? (*Less than significant*)**

### Construction, Operation, and Decommissioning

As described in Section 3.16.4.1, Project implementation would require a total of approximately 2,660 AF of water for construction, operation, and decommissioning. The annual water use during the construction and decommissioning phases would consume about 13 percent of annual recharge to the CVGB or 11 percent of annual recharge to the PVMGB, while annual operational consumption would represent a negligible percentage of annual recharge regardless of which basin is used (see Section 3.18, Water Resources, for further detail). Sufficient water exists in these non-adjudicated groundwater basins to serve short-term construction needs and long-term operational needs regardless of whether the construction phase would fall during normal, dry, or multiple dry year scenarios. Project impacts would be less than significant. Section 3.18, Water Resources, describes potential impacts on nearby wells and/or on Colorado River water from Project-related consumption; however, these impacts are not related to the overall availability of water to serve the Project and reasonable foreseeable future development.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation measures are required.

**Impact 3.16.5c: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? (*Less than significant*)**

### Construction, Operation, and Decommissioning

As discussed in Section 3.16.4.1, sanitary wastewater would be stored on-site for off-site treatment. The Project would not require connection to or service from a wastewater treatment facility. This impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation measures are required.

**Impact 3.16.5d: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (*Less than significant with mitigation incorporated*)**

### Construction, Operation, and Decommissioning

As discussed in Section 3.16.4.1, Project construction, demolition, and inert debris would be handled in accordance with applicable regulatory requirements. Project construction is expected to generate 7,035 cy of nonhazardous construction waste, 100 cy of solid and approximately 2,000 gallons of liquid hazardous waste, and approximately 40 pounds from spent batteries from construction machinery and equipment (Recurrent 2019). Project operation would produce minimal waste, generated by 10 full-time employees, and would be primarily limited to office waste products. Solid waste generated during operations would be disposed of off-site by appropriate contractors. Blythe Landfill has a remaining daily capacity of 315 tons and a total remaining capacity of approximately 4 million cy (CalRecycle 2018a). Disposal of the 7,035 cy (8,442 tons) of nonhazardous construction waste would not exceed Blythe Landfill's total remaining capacity. This landfill has sufficient total capacity to continue to provide solid waste disposal through 2047. Decommissioning would result in removal of aboveground structures and underground equipment. The disposal of broken or degraded solar panels during all phases of the Project could require special handling or disposal practices and would be guided by the HMBP described in Section 3.8, Hazards and Hazardous Materials. Riverside County is required to demonstrate annually that at least 15 years of capacity remains in landfills throughout the county, or to create and implement a plan to site additional capacity to achieve and continue to meet the 15-year capacity requirement. Therefore, it is anticipated that the County would have at least 15 years of remaining landfill capacity during decommissioning. While the Blythe Landfill is projected to have sufficient landfill capacity during Project Construction, Operation and Decommissioning, the Project's solid waste may combine with other existing and future project's solid waste that is disposed at Blythe Landfill. Mitigation Measure PSU-1 requires the preparation and implementation of a Waste Recycling Plan to ensure preservation of landfill capacity and support efforts to recycle, reuse, and/or reduce the amount of recyclable material going to the landfill during construction, operation and decommissioning, and also includes an "evidence" requirement to ensure compliance with the intent of the Waste Recycling Plan. Implementation of Mitigation Measure PSU-1 would reduce potential significant impacts concerning solid waste generation to a less than significant level. In addition, disposal and waste handling for all waste flows generated on-site during Project construction, operation and maintenance, and decommissioning would be completed in accordance with all applicable laws and policies, including but not limited to 22 CCR Division 4.5 (disposal/recycling of hazardous and universal wastes) and Riverside County's CIWMP.

Hazardous wastes generated during construction, operation and closure/decommissioning would be recycled to the extent possible and practical. The accumulated wastes would then be properly manifested, transported, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal firms in accordance with applicable regulations and standards. Hazardous wastes would likely be transported to one of two available Class I waste facilities: Clean Harbors Buttonwillow Landfill in Kern County and Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and III waste. There is sufficient remaining capacity at these facilities to handle the Project's hazardous wastes during its operating lifetime. In addition to the Class I landfills, there are several commercial liquid hazardous waste treatment and recycling facilities in California that can process project-related hazardous wastes.

### Mitigation Measures

Implementation of Mitigation Measure PSU-1.

### Significance after Mitigation

This impact would be less than significant after implementation of Mitigation Measure PSU-1.

**Impact 3.16.5e: Would the Project comply with federal, state, and local statutes and regulations related to solid waste? (*Less than significant*)**

### Construction, Operation, and Decommissioning

As stated previously, Project construction is expected to generate 7,035 cy of nonhazardous construction waste, 100 cy and approximately 2,000 gallons of hazardous waste, and approximately 40 pounds from spent batteries from construction machinery and equipment (Recurrent 2019). Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Non-recyclable, nonhazardous solid waste materials would be disposed of at the Blythe Landfill in accordance with state and local regulations. Disposal and waste handling for all waste flows generated on-site during Project construction, operation and maintenance, and decommissioning would be completed in accordance with all applicable laws and policies, including but not limited to 22 CCR Division 4.5 (disposal/recycling of hazardous and universal wastes) and Riverside County's CIWMP. In addition, Mitigation Measure PSU-1 requires the preparation and implementation of a WRP, that is consistent with the CIWMP, to preserve landfill capacity and support efforts to recycle, reuse, and/or reduce the amount of recyclable material going to the landfill. Therefore, this impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation measures are required.

**Impact 3.16.5f: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services (*Less than significant with mitigation incorporated*):**

**i) Fire protection?**

The use of personnel, vehicles, materials, and equipment during Project construction, operation, and decommissioning would increase the risk of a fire event at the Project site that would require a response by RCFD at the Project site. In addition, the introduction and spread of non-native plant species could create a fire fuel source at the Project site. Travel time from the nearest fire station (25 to 30 minutes) would exceed the total response time goal for outlying areas (14 minutes 50 seconds); however, this would not cause RCFD to provide new or physically altered fire protection facilities because the overall goal is to achieve this response time for 80 percent of calls. A report commissioned by RCFD points out that adding stations in sparsely populated outlying areas is not a cost-effective method for improving emergency response (TriData LLC 2016). Thus, the physical impact related to the need for provision of new or physically altered fire protection facilities would be less than significant.

Further, implementation of Mitigation Measures FIRE-1 (Fire Safety Plan), BIO-15 (wildfire risk reduction), and BIO-16 (weed management), would reduce the risk of fire-related events at the Project site, reducing the potential for emergency fire protection calls, the response to which would adversely affect RCFD's total response time statistics in outlying areas. However, these mitigation measures are not necessary to reduce a significant impact related to the construction of new or expanded RCFD facilities as no such impact is anticipated.

See Section 3.19, Wildland Fire Ecology, for a discussion and analysis of the Project's wildfire-related impacts.

**ii) Police protection?**

As described in Section 3.16.4.1, the staff of sworn officers from RCSD or BPD could accommodate the related increase in population because the number of new workers would not substantially alter the current service ratios of either agency. Additionally, the Project would include security measures such as fencing, controlled access, lighting, security personnel, and security cameras to deter criminal activity. Therefore, the Project is not expected to result in additional needed public protection services from RCSD or BPD or the construction of new police protection facilities. This impact would be less than significant.

**iii) Schools?**

Project construction and decommissioning positions would be short term, lasting only a few months on an individual worker basis. These temporary workers are not likely to relocate school-aged children into the PVUSD service area. During operation, a total of 10 full-time employees would staff the solar facility site. These workers may relocate school-age children to PVUSD schools. However, this would be unlikely to result in an exceedance of the physical capacity of PVUSD facilities. Therefore, Project implementation would not result in the need for new or physically altered school facilities, and no impact would occur.

**iv) Parks?**

As discussed in detail in Section 3.12, Recreation and Public Access, impacts would be less than significant.

**v) Other Public Facilities?**

The Project would not result in substantial adverse effects to other types of public facilities, such as public libraries, hospitals, or other civic uses because it would not result in a significant increase of local population or housing, which is typically associated with increased demand for public facilities. Therefore, the Project would not adversely affect public services or result in the need for new or physically altered facilities. No impact would occur.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Less than significant.

## 3.16.5.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

Implementation of Alternative B would generally result in similar effects to utilities and service systems as described for Alternative A. Alternative B would include roughly the same number of Project employees during construction and operation as Alternative A, and thus would generate a similar amount of wastewater. Alternative B would require substantially less grading, trenching, and vegetation removal than Alternative A, would retain a greater amount of the existing on-site drainage pattern, would include the development of slightly less impervious surfaces, and would include slightly less compacted roads, which together would slightly reduce the amount of stormwater runoff from the Project site. Implementation of Mitigation Measure BIO-32 would be required under Alternative B and would address potential impacts to electric power facilities with compliance with the Avian Power Line Interaction Committee design guidelines for poles. Mitigation Measure BIO-14 (SWPPP and DESCP) would also be required under Alternative B. This alternative would require slightly reduced water during construction due to substantially less grading and trenching and thus water needed for dust suppression. Water use during operation and decommissioning would be similar to Alternative A. Mitigation Measures WAT-1 and WAT-2 would still be required to monitor the use of groundwater and Colorado River water. The amount of solid waste generated during implementation of Alternative B would be the same as Alternative A. Mitigation Measure PSU-1 would also be required under Alternative B. Alternative B would involve a slightly increased fire risk when compared to Alternative A due to the collector cables being placed aboveground, which could present new ignition source (see Section 3.19, Wildland Fire Ecology). However, the effect on the local fire department would be the same as the Project with the same response time for fire protection at the Project site. Alternative B would involve the same number of workers during construction, operations and decommissioning as Alternative A. Therefore, as with Alternative A, with implementation of the proposed mitigation, impacts would be less than significant.

## 3.16.5.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

The Project effects of Alternative C would be similar to Alternative A, but would occur at reduced levels because the developed area would be smaller. Alternative C would include roughly the same number of project employees during construction and operation as Alternative A, and thus would generate a similar amount of wastewater. The smaller area would result in substantially less grading, trenching, and vegetation removal than the proposed Project, would retain a greater amount of the existing on-site drainage pattern, would include the development of slightly less impervious surfaces, and would include slightly less compacted roads, which together would reduce the amount of stormwater runoff from the Project site. The reduced scale of this alternative would require less water during construction (estimated to be 870 AF, approximately 13 percent less) due to substantially less grading and trenching and thus water needed for dust suppression. Alternative C is expected to result in slightly less solid waste generated during construction and decommissioning than Alternative A. Because the number of construction workers is anticipated to be similar to that required for Alternative A, the impacts of Alternative C on fire, police, and other civic services would be expected to be minor. Furthermore, the same mitigation measures would be implemented under Alternative C as for the Project to further reduce the Project effects. Mitigation Measure BIO-14 (SWPPP and DESCP; see Appendix B) would be required to minimize the effect of wastewater and stormwater impacts. Mitigation Measures WAT-1 and WAT-2 would be required to monitor the use of groundwater and Colorado River water. Mitigation Measure PSU-1 would be required to manage the recycling of waste materials. Therefore, as with Alternative A, with implementation of the proposed mitigation, the impacts of Alternative C would be less than significant.

### 3.16.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, no changes would occur, and the existing environmental setting would be maintained. This alternative would result in no impacts to utilities and public services as there would be no stormwater, water, or wastewater treatment facilities constructed, no increase in water demand, no generation of solid waste, and no demand on public services.

## 3.16.6 Cumulative Effects

### 3.16.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The cumulative analysis provided below considers implementation of the Project in combination with other past, present, and reasonably foreseeable future projects. All projects listed in Table 3.1-1 were considered in this analysis. The Project would have no impact with respect to new water, wastewater treatment or stormwater drainage facilities, as no such new such facilities would be required (other than a water pipeline to an on- or off-site well and potentially on-site stormwater BMPs which would not connect to local systems and not result in significant environmental effects). Therefore, the Project would not contribute to significant cumulative impacts in terms of these facilities. Furthermore, while the cumulative projects could potentially add to an increase of pollutants and sediment in area waterways, the Project and the cumulative projects would be subject to NPDES (SWPPP, BMPs, etc.) and other water quality requirements that have been formulated to avoid significant stormwater-related water quality impacts during both construction and operation.

The geographic scope of cumulative impacts for stormwater drainage include all of the areas that drain into Wiley’s Wash and Ford Dry Lake. Cumulative projects within the geographic scope could contribute to a cumulative effect on stormwater runoff into Wiley’s Wash and Ford Dry Lake. The Project would not result in significant increases in downstream flow rates. Furthermore, the Project’s contribution to this impact under storm conditions up to a 100-year storm would be reduced through implementation of a SWPPP and other measures to avoid downstream flooding. Therefore, the incremental increase of stormwater runoff from the Project would not be cumulatively considerable.

The boundaries of the CVGB and PVMGB establish the appropriate geographic scope for the consideration of potential cumulative impacts to water supply and groundwater storage. The analysis presented for the Project was a cumulative analysis, as it evaluated the impact of withdrawals on all known water users in the CVGB and PVGB. The Project would may represent a noticeable contribution to the total use of groundwater from the CVGB and PVGB (see Section 3.18, Water Resources for details). Mitigation Measure WAT-1 and WAT-2 would reduce the Project’s contribution to cumulative water supply impacts to a less-than-significant level.

The geographic scope of potential cumulative impacts to landfill capacity would be the area served by Blythe Landfill. Because the same state and local requirements for waste diversion, recycling, and landfill capacity in Riverside County that are applicable to the Project would also apply to the projects in the cumulative scenario, the total volume of waste disposed at Blythe Landfill under the cumulative scenario is not expected to exceed the permitted capacity. In addition, Mitigation Measure PSU-1 (the preparation and implementation a Waste Recycling Plan to ensure preservation of landfill capacity through recycling and reuse) would further reduce the Project's incremental contribution of solid waste at the Blythe Landfill. Therefore, the Project's contribution disposal of solid waste and available landfill capacity would not be cumulatively considerable. The geographic scope of cumulative impacts to fire and police protection services is the service area of the stations in Blythe, Indio, and the lower Coachella Valley that respond to incidents at the Project site.

Project activities would result in a less-than-significant impact related to generation of a need for new or modified police protection facilities, service ratios, response times or other performance objectives for any public services. Mitigation Measures FIRE-1, BIO-15, and BIO-16 would ensure that impacts to fire protection services would not significantly impact response times objectives of the RCFD. Therefore, impacts would not be cumulatively considerable with mitigation incorporated.

### 3.16.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

Alternative B would result in the same cumulative impacts as identified for Alternative A.

### 3.16.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would result in the same cumulative impacts as identified for Alternative A.

### 3.16.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project Alternative would result in no cumulative impacts related to utilities and public services as there would be no increases in demand for any utilities or public services.

## 3.16.7 Residual Effects

No residual impacts are anticipated for utilities and public services after mitigation is incorporated.

# 3.17 Visual Resources

## 3.17.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning scenic vistas, visual resources, the existing scenic quality of the Project site and its surroundings, and the light and glare conditions of the area surrounding the site. The regulations applicable to this analysis are summarized in Appendix E.

This section also provides a high-level glare analysis for the various solar photovoltaic (PV) design options described in Chapter 2, Project and Alternatives. The study area for the visual resources assessment was defined by a 20-mile radius surrounding the Project site and includes all land areas from which any element of the Project would be visible.[1]

As part of the Bureau of Land Management (BLM) right-of-way (ROW) application process, the Applicant provided a Visual Resources Technical Report (VRTR), which evaluates the degree of contrast between the Project and alternatives with the existing landscape and conformance with the BLM's Visual Resource Management (VRM) objectives (AECOM 2019, included as Appendix T.1). The photographs, visual descriptions, calculations, assumptions, and conclusions in the report were independently reviewed by the lead agencies and their consultants (ESA) and were determined to be acceptable for incorporation in this analysis.

## 3.17.2 Regional and Local Environmental Setting

The Project site is located to the northwest of the Mule Mountains in Riverside County, California. The landscape character consists primarily of desert with agricultural croplands to the east in the Imperial Valley and mountain ranges rising from the desert floor to the southeast of the Project site. The study area includes the broad, flat Chuckwalla Valley to the west, and the western edge of the Colorado River Valley approximately 4.5 miles to the east. Terrain on-site generally slopes down towards the base of the Mule Mountains to the southeast.

There is no existing lighting within the Project site. The most significant light sources in the vicinity of the Project site include lights from traffic on I-10 to the north, Blythe in the distance to the northeast, state prisons to the west, the CRS to the northeast, and Blythe Airport to the north. Overall, these outdoor lights are muted and do not contribute significantly to the existing nighttime light environment. During daytime hours, roadways generate glare from the sun's reflection off cars and paved surfaces. At night, vehicle headlights on surrounding roadways also generate glare.

### 3.17.2.1 Visual Resources Inventory

The BLM establishes landscape-level visual values through a Visual Resource Inventory (VRI) process by assessing scenic quality, visual sensitivity, and distance zones. Section 4.2 of Appendix T.1 provides a summary of BLM's VRI conducted for the Project area. As described in greater detail in Appendix T.1, the Project site is within a Scenic Quality Rating Unit (SQRU) that has a scenic quality rating of B, or moderate, based on the BLM's evaluation of the fairly distinctive but not unusual scenery, the low and gently rolling valley bottom, the subtle variation in vegetation and color, the dramatic mountains surrounding the area, and the lack of water and cultural modification in the surrounding. The Project site is within a Sensitivity Level Rating Unit (SLRU) that has a sensitivity rating of H, or high, primarily based on the BLM's evaluation of high off-highway vehicle use of the nearby Bradshaw Trail, the area's presence within the California Desert Conservation Area, and the adjacent wilderness and other conservation designations. The Project site is located in the foreground-

1 This study area was chosen because the visibility of the Project would likely attenuate at this distance when observed from at-grade observer points, and the visual contrast of the Project would be weak when viewed from higher elevations. Viewshed modeling is described in Appendix T.1.

middleground distance zone, indicating visibility of this area from locations within 3 to 5 miles from viewing platforms. Based on these factors, the BLM assigned VRI Class II, high scenic value, to the Project area.

Specific to the Project site itself, five Key Observation Points (KOPs) were established to identify existing conditions, representing common and sensitive views of the Project area from locations accessible to the public (Figure 3.17-1). The landscape character and scenic quality attributes as viewed from each of the KOPs are described in detail in Section 4.3 of Appendix T.1, and they provide a variety of at-grade and superior views of the Project site. Views toward the Project site from each KOP are provided in Figures 3.17-2 through 3.17-6.

### 3.17.2.2 Adjacent Uses

The Project site is located north/northeast of the Mule Mountains Area of Critical Environmental Concern (ACEC), north and east of the Mule-McCoy Linkage ACEC, and east of the Chuckwalla ACEC. The McCoy Valley and McCoy Wash ACECs are located to the northeast across Interstate 10 (I-10). While visual resources are not the primary management objective for these ACECs, they do include visual resource management (VRM) class objectives. In particular, the Mule Mountains and Mule-McCoy Linkage ACECs are VRM Class II, and the Chuckwalla, McCoy Valley, and McCoy Wash ACECs are VRM Class III (BLM 2016). The Bradshaw Trail, a National Back Country Byway, traverses mostly public land between the Chuckwalla Mountains and the Chocolate Mountain Aerial Gunnery Range. Portions of the Bradshaw Trail intersect the Project viewshed in the foreground/middleground and background distance zones, and multiple recreation-based viewing opportunities exist along the Bradshaw Trail. The Southern California Edison high-voltage transmission line and Colorado River Substation (CRS) are located directly north of the Project site, and I-10 is approximately 1 mile north of the northern Project boundary. Though the Project area is characterized by large areas of undeveloped land, industrial, commercial, and residential development are present in adjacent areas, including recent solar developments.

## 3.17.3 Analytical Methodology

### 3.17.3.1 Visual Contrast

This analysis evaluates the level of visual contrast that the Project or alternatives could produce in the existing landscape defined by the VRI and KOPs. A measure of visual impact includes potential human reactions to the visual contrasts arising from a development activity, based on the number of viewers, viewer characteristics (including attitudes and values), expectations, and other characteristics that that are viewer- and situation-specific.

The primary tool used to analyze visual impacts that would be created by the Project is the BLM’s visual contrast rating system. Five KOPs were identified for this analysis, as shown in Figure 3.17-1 and Table 3.17-1. Figures 3.17-2 through 3.17-6 present both the existing and simulated conditions. The intent of establishing KOPs is to evaluate the degree of visual contrast created by the Project and alternatives with the existing landscape from locations most representative of how the public perceives the affected landscape. The “public” may include highway travelers, travelers on local roads, residents in surrounding interspersed private lands, off-highway vehicle users, dispersed recreational users in surrounding wilderness areas, or users of BLM facilities. Several factors influence the sensitivity of these diverse user groups to changes in the landscape, including how prominent the view of the Project is (in terms of scale, distance, and angle of observation), the frequency and duration that viewers are exposed to the view, and whether the viewer groups are aware of their surroundings or expectant of high-quality views and views of unaltered natural landscapes.

Table 3.17-1 describes the five KOPs used in this analysis, including their general location and distance from the Project site, and summarizes the environmental factors that could influence Project visibility and degree of visual contrast with the existing landscape. These KOPs were selected in cooperation with, and approved by, the BLM Palm Springs Field Office. The VRTR preparers identified areas of visual sensitivity and viewer groups located within the analysis area using a desktop review of relevant planning documents including the Riverside County General Plan and BLM’s 2010 Visual Resource Inventory. Three of the KOPs (1, 3, and 4) are at sensitive cultural sites and are considered confidential, and therefore their locations are not precisely described here. The BLM identified these cultural KOPs based in part on information from cultural reviews performed for other projects in the area, which highlighted the cultural sensitivity of the Mule Mountains, and which incorporated tribal input (Hanes 2019; see Appendix K.3). For more information about the KOPs, see Section 4.3 of Appendix T.1.

**TABLE 3.17-1**
**KOP LOCATION AND CHARACTERISTICS**

| ID | Location | Distance From Project (Miles) | Viewer Geometry | Primary User Type | Duration of View | Comments |
|---|---|---|---|---|---|---|
| KOP 1 | East of Project site | 2.5 | At grade | Individuals using cultural sites | Sustained (Potential) | Landscape view. |
| KOP 2 | I-10, northwest of Project site | 5 | At grade | Motorists | Temporary/ intermittent | Traveling westbound, the landscape appears natural. Traveling eastbound, the city of Blythe is dominant in the foreground/middle ground. Speed limit is 70 mph. |
| KOP 3 | Base of Mule Mountains southeast of Project site | 0.5 | Superior | ORV users, individuals exploring the mountains | Sustained (Potential) | |
| KOP 4 | Mule Mountains south-southeast of Project site | 1 | Superior | Individuals using cultural sites | Sustained (Potential) | Viewshed from within the Mule Mountains. |
| KOP 5 | Wiley's Well Road | 4 | At grade | Motorists | Temporary/ intermittent | |

This analysis also addresses the potential adverse effects of lighting and glare, as well as temporary construction disturbances. ForgeSolar's Glare Analysis Tool[2] was used to assess light and glare impacts visible from each of the KOPs.

### 3.17.3.2 Plan Conformance

Based on the visual contrast rating, the analysis describes whether the Project or alternatives would be in conformance with the VRM class objectives applicable to the Project site. No VRM classes were established for the Project site in the California Desert Conservation Area (CDCA) Plan; since the Project is subject to the regulatory regime that was in place before the adoption of the Desert Renewable Energy Conservation Plan (DRECP), analysis of the Project's consistency with the CDCA Plan via consideration of the applicable Multiple Use Classes (MUCs) could be an appropriate approach. However, because such an analysis would not be meaningful or informative in the current landscape level planning environment, this Final EIS instead analyzes Project consistency with the CDCA Plan in a manner that serves the intent of the MUC analysis (i.e., to assure that the proposed Project, if approved, would be consistent with other land uses and land use activities in the affected area). In other words, instead of evaluating the Project relative to specifics of use types and intensities that previously would have been allowable but which no longer exist, the Project is analyzed for consistency with other existing uses and use restrictions that are currently in place. The proposed action is within a Development Focus Area (DFA) and therefore the analysis for VRM will assess consistency with the allowable uses and restrictions established for DFAs, including the DRECP Conservation and Management Actions (CMAs) and the mitigation obligations set forth in the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) amendment to the CDCA Plan. In order to be consistent with the guidance provided in BLM Manual 8431 and 43 CFR Section 1610.5-3(b), the BLM has assigned the project area an interim VRM Class IV (BLM 2019).

[2] This tool uses technology originally developed as the Solar Glare Hazard Analysis Tool (SGHAT) by Sandia National Laboratory and was approved by the Federal Aviation Administration. It incorporates the dimensions of a solar facility, latitude, longitude, and elevation to predict the amount of glare that would be experienced at observer positions based on the position of the sun, and the angle at which the sun would reflect off the panels.

Table 3.17-2 summarizes the four categories of degree of visual contrast and the VRM classes that can accommodate each degree of contrast while achieving VRM objectives, per BLM's VRM handbook.

**TABLE 3.17-2**
**VISUAL CONTRAST RATINGS AND VRM OBJECTIVE COMPATIBILITY**

| Degree of Contrast | Criteria | Consistent with… |
|---|---|---|
| None | The element contrast is not visible or perceived. | VRM Class I - IV |
| Weak | The element contrast can be seen but does not attract attention. | VRM Class II - IV |
| Moderate | The element contrast begins to attract attention and begins to dominate the characteristic landscape. | VRM Class III - IV |
| Strong | The element contrast demands attention, will not be overlooked, and is dominant in the landscape. | VRM Class IV only |

SOURCE: BLM 1986

In addition to determining whether VRM objectives are met by comparing the contrast ratings to these objectives, the analysis also addresses the overall VRM goal to minimize visual impacts by preparing mitigation measures for all adverse contrasts that can be reduced, including reduction of contrast in projects which have met the VRM objectives (BLM 1986).

## 3.17.4 Direct and Indirect Effects

### 3.17.4.1 Alternative A: Proposed Action

#### *Construction*

During construction, earth-moving activities and construction materials, equipment, trucks, and parked vehicles would be visible on the Project site. Construction would last 2 years and would include large-scale vegetation removal, earthwork, and foundation and equipment installation. These activities could result in a high degree of visual contrast within the landscape because the color of the underlying earth (light tan) would stand in contrast within the darker colors of the vegetation and desert pavement currently present in the landscape. Although construction would be phased so that no one construction activity would occur in any one place for the entire construction period, the overall degree of visual impact during construction would encompass the entire Project site as the phases of construction progress. The visual effects would be temporary, replaced by long-term effects of operation described below.

The visual effects of construction could also include the generation of large quantities of airborne dust as well as evening construction lighting (i.e., during fall and winter months through 7 p.m.). Adverse visual effects from large quantities of airborne dust during construction would be reduced with the implementation of Mitigation Measure AQ-1, which requires implementation of a dust control plan to minimize fugitive dust (including dust visible from offsite). The relatively short daily duration of seasonal early evening lighting would not cause substantial night lighting effects. No nighttime (i.e., from 7 p.m. to sunrise) construction lighting is proposed.

Areas of temporary construction disturbance would be revegetated according to Mitigation Measure BIO-18, which requires implementation of a Restoration Plan including the salvage and replacement of topsoil and plants and revegetating areas subject to temporary impacts during the construction period. The earthwork and vegetation strategies in Mitigation Measures VIS-1 and VIS-2 would soften the contrast created by clearing and grading. They would reduce visual impacts during and after construction by requiring measures such as feathering the edges of areas graded and grubbed for construction to reduce form and line contrasts; preserving existing rocks, native vegetation, drainage patterns, and other natural characteristics to the extent feasible; and minimizing evening lighting. While Mitigation Measures AQ-1, BIO-18, VIS-1, and VIS-2 would reduce visual contrast during and following construction, the visual contrast created by vegetation removal and the presence of construction materials, equipment, and partially constructed facilities would contribute to a high degree of visual contrast apparent in the landscape.

### *Operation and Maintenance*

The Project would convert 2,500 acres of undisturbed desert valley to a solar energy facility characterized by geometric forms, lines, and man-made surfaces that are industrial in appearance and dissimilar to the surrounding natural landscape character. Additional details of project design and layout are provided in Section 2.4.2.1. Documentation of the visual contrast ratings is included in Section 5.1 of Appendix T.1, and the structures' degree of contrast is summarized in Table 3.17-3 based on the visual contrast analysis (AECOM 2019), which the BLM, CDFW, and their environmental consultant reviewed and independently verified.

**TABLE 3.17-3**
**VISUAL CONTRAST AND VIEWER EXPOSURE**

| ID | Landscape Change | Project Visual Contrast Summary |
|---|---|---|
| KOP 1 | Overall contrast: Weak to Strong<br>Contrast source: Form, line, texture<br>Scale dominance: Sub- to codominant | Where vegetation is sparse or open, the profile of the panels would be visible and could result in strong visual contrast. Visual contrast would result from the discrete, horizontal line and smooth surface of the panels against the surrounding vegetation. However, visual contrast would be weak, or none would be apparent, where the low-stature solar array would be screened by the gently rolling topography and vegetation of the valley (Figure 3.17-2). |
| KOP 2 | Overall contrast: Weak to Moderate<br>Contrast source: Form, color, texture<br>Scale dominance: Dominant | The Project would result in weak to moderate visual contrast depending on the vantage point of the viewer along I-10. Figure 3.17-3 depicts a representative view based on the location of the KOP shown in Figure 3.17-1. Project panels, graded/cleared areas, and structures would contrast at a moderate level against the primarily natural setting of the Chuckwalla Valley and the Palo Verde Mesa. The overall visual contrast caused by cleared areas and panel arrays would be weak, as views of the ground-plane would be largely shielded by vegetation for viewers situated at-grade on I-10 relative to the Project. From higher vantage points on I-10, visual contrast from the Project would could increase to moderate as cleared areas and low-stature solar panels would be more visible. Viewer exposure would be transient while traveling at high speed on I-10. |
| KOP 3 | Overall contrast: None to Moderate<br>Contrast source: Line<br>Scale dominance: Subdominant | From this KOP, the moderate-stature elevation of the Mule Mountains would screen views of most of the Project, resulting in no visual contrast (Figure 3.17-4). However, views directed to the north could perceive moderate contrast at the Project's eastern edge. The Project would appear subordinate due to the scale of the surrounding landscape. |
| KOP 4 | Overall contrast: Strong<br>Contrast source: Form, texture<br>Scale dominance: Dominant | Visual contrast would be strong due to the scale of the Project and the elevated vantage point of this KOP (Figure 3.17-5). Strong visual contrast would result from the broad, flat form and dark, reflective surface of the solar panels against the existing muted tones of the landscape. From this elevated viewer platform, the scale of the solar panels would dominate the landscape. Other Project features, including the gen-tie, would be visible; however, these features would contrast at a weak level against the existing landscape, largely due to the presence of multiple other transmission structures with similar form, line, and axis within the study area. |
| KOP 5 | Overall contrast: None to Weak<br>Contrast source: Line, texture<br>Scale dominance: Subdominant | Contrast visible from Wiley's Well Road would be weak or not apparent (Figure 3.17-6). The low visibility of the Project from this location is primarily due to screening by the low rolling topography of the Chuckwalla Valley. Visibility of taller structures, such as the gen-tie, would also result in weak or no visual contrast, largely due to the location of these features relative to this observation point and the difficulty in discerning the narrow vertical line of these features at this distance. In addition, the presence of other existing transmission lines in and surrounding the Project site would reduce the contrast created by the proposed collector poles and gen-tie structures. |

SOURCE: AECOM 2019

### Visual Contrast Summary and Plan Conformance Analysis

As described in Table 3.17-3, the visual contrast created by the Project's presence in the landscape would range from none or weak contrast to strong contrast, depending on the point of observation. Weak or no contrast would be experienced at KOP 5 (Wiley's Well Road); thus, impacts on visual values would be minor to negligible from this viewpoint. The Project would be visible from certain locations along I-10, which is represented by KOP 2, and from KOP 3 except where blocked by vegetation. From these KOPs, the visual contrast of the Project in the landscape would be weak or moderate. Impacts on visual values would be minor from these viewpoints because the Project's weak to moderate contrast would not dominate the landscape and would not be visible from all vantage points represented by these locations.

Strong visual contrast would be visible from KOPs 1 and 4. In particular, sustained, strong visual contrast at KOP 4 is expected given the high elevation of this location and the unfettered views across the valley. The strong visual contrast from KOPs 1 and 4 would result from the broad, flat form and dark, reflective surface of the solar panels against the existing muted tones of the landscape. From this elevated viewer platform, the scale of the solar panels would dominate the landscape. Where the Project would be visible from KOP 4, impacts from visual contrast would be of medium to high intensity, long term, regional, and affecting important resources. The duration of impacts is considered long term, extending for the life of the Project, and the geographic extent of impacts is considered regional. The effect is considered important because the Project area has been determined to have high visual value (VRI Class II), and also because adjacent areas include special designations such as ACECs and cultural sites.

Mitigation measures are recommended to reduce the strong contrast that would occur in an area of high visual value (VRI Class II). Mitigation Measure VIS-1 would require that the Applicant incorporate visual design elements into final project to reduce contrasts in form, line, and color. Mitigation Measure VIS-3 would require maintenance and monitoring of visual resources mitigation compliance, including revegetation and long-term maintenance of color-treated facilities to reduce contrast.

The strong visual contrast created by the Project would be consistent with VRM Class IV objectives. Nonetheless, the overall VRM goal is to minimize visual impacts even where VRM objectives are met. Therefore, the recommendation of Mitigation Measures VIS-1 and VIS-3 is consistent with BLM's VRM policy (BLM 1984, 1986).

While nighttime lighting and the potential for glint or glare are components of overall visual contrast, these issues are treated separately in the subsections below because the simulations used to rate visual contrast only model the daytime visual change, and do not consider the effects of night lighting or temporary glare.

### Night Lighting

Operation and maintenance would require on-site nighttime lighting for safety and security. Lighting would be limited to areas required for operations or safety, directed on-site to avoid backscatter (i.e., a reflection of light back to the direction from which it came), and fully shielded from public view to the extent practical. Lighting that is not required during nighttime hours would be controlled with sensors or switches operated such that lighting would be turned on only when needed. Under normal circumstances, the Project solar field would not be illuminated. While the level of light generated by the Project is expected to be low, especially from the most common public viewpoints, the Project would nevertheless be in an area with very few existing structures, and the use of uncontrolled or excessive lighting could be noticed by nearby motorists on I-10. No lighting would be required for the Project's gen-tie line.

Mitigation Measure VIS-1 requires the preparation of a lighting plan that documents how lighting would be designed and installed to minimize night-sky impacts during operation. The lighting plan would include numerous measures to prevent unnecessary use of lights, minimize light intensity, and prevent light spillage and reflectance to off-site areas. With the implementation of Mitigation Measure VIS-1, facility lighting would be minimized and controlled such that it would not be a nuisance and would not detract from the ability for affected viewers to enjoy their surroundings or view the night sky.

### Glint and Glare

Solar PV employs glass panels that are designed to reflect as little as 2 percent of the incoming sunlight (FAA 2010). However, some glare is possible from the surface of the PV panels and other Project components (especially metallic components) that reflect light depending on panel orientation, sun angle, viewing angle, viewing distance, and other factors. When compared to common reflective surfaces, solar panels without an anti-reflective coating are found to produce around the same amount of reflectivity as water, which is about half the amount of reflectivity as the standard glass commonly used in residential or commercial applications (Shields 2010). If an anti-reflective coating is applied to the solar panels, the reflectivity of the panels can be further reduced to be significantly less than the reflectivity of water.

The amount of glare created by PV solar facilities is variable based on the material type of the solar panels. Specular reflection is caused by polished surfaces such as mirrors and smooth glass, and results in a higher level of contrast, or glare. Diffuse reflection is caused by rough surfaces, such as textured glass, and results in a relatively lower level of contrast, or glare (Sandia National Laboratories 2014). Generally, PV panels are made to absorb as much light as possible to convert into electricity, and thus to result in minimal reflection. Because of this, essentially all of the light that passes through the front surface of the module is trapped in the layers below. High reflectance typically only occurs early and late in the day, when the angle of the sun is low with respect to the plane of the solar array. (Shea 2012)

The panels 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 2013). If the Applicant chose the single-axis tracking system, the faces of the solar panels generally would be visible from locations to the east of the Project site during the morning hours, and from locations to the west of the Project site during the afternoon and evening hours. It is possible that back-reflected light or light not absorbed by Project facilities could produce minor glare, particularly when the viewer is positioned in line with the sun. This glare could occur in any one place for several hours (e.g., on a sunny afternoon) and could be visually distracting or nuisance-causing. Haze or dust in the air would reduce the effect (BLM 2013). Due to the primarily natural setting of the Chuckwalla Valley and the Palo Verde Mesa, glare from the Project could be more visually intense than any other natural or cultural features in an observer's perspective. Glare produced by diffuse reflections would increase the color contrast of the Project in the landscape, but would not be sufficiently intense or distracting as to increase any of the weak or moderate contrast ratings in Table 3.17-3 to strong.

A glare analysis was performed from each KOP using the ForgeSolar PV planning and glare analysis tool. This tool uses three classification levels to describe the impact of viewed glare, which are simplified for purposes of the National Environmental Policy Act (NEPA) analysis as follows: low potential for after-image ("minor" glare), potential for after-image ("moderate" glare), and potential for permanent eye damage ("major" glare). This analysis found that viewers at KOPs 2 and 5 would not experience glare impacts under any of the PV design options shown in Table 3.17-4, which summarizes results of potential glare for KOPs 1, 3, and 4.

If the single-axis tracking design is used, all glare described above would have "low potential for temporary after-image," the lowest rating of potential glare in the tool results. A single-axis tracking system would orient panels perpendicular to incoming solar radiation, allowing incident solar rays to be perpendicular to the PV panel. Light reflected off the panel would be reflected back toward the light source, rather than toward motorists or sensitive receptors on the ground. The single-axis horizontal tracking system would be arranged in north-to-south oriented rows, and would track the sun in the east-west direction. Using this system, solar reflections would be directed upward, away from observers on the ground.

Fixed-tilt arrays could be used instead of the single-axis tracking panels. The intensity of glare from fixed-tilt arrays would have the potential for temporary after-image (moderate levels of glare). This amount of glare would not introduce a visual hazard, but would increase the visual contrast of the Project site. Of the fixed-tilt options, those with a smaller tilt would result in fewer impacts than those with a higher tilt angle.

Some glare from the PV panels would be visible from aircraft approaching and departing Blythe Airport above or near the solar field. Most of the glare would be limited to early morning or late evening landings, located outside the pilots' area of intense focus and more than 5 miles from the end of the runway. The glare would not be concentrated, and would be of a similar or lesser intensity than that experienced by pilots making airport approaches or takeoffs over bodies of water. The glare would not impact aircraft engaged in an initial straight climb following takeoff or a straight final approach toward a landing at the airport.

The solar array would not create substantial glint or glare during normal operations that would be visible from other sensitive viewpoints, which include residences with views of the Project, I-10, and recreational facilities.

Mitigation Measure VIS-4 requires the development and implementation of a Glint and Glare Mitigation and Monitoring Plan. The intent of the plan would be to reduce the occurrence and impact of glint and glare from the solar field. Although the contrast of the solar panels would intermittently increase during times of the day when the viewer is positioned in line with the sun, with implementation of Mitigation Measure VIS-4, it would not increase to such an extent as to result in a change in the severity of the contrast rating in Table 3.17-3.

**TABLE 3.17-4**
**POTENTIAL GLARE AT KEY OBSERVATION POINTS**

| PV Type | KOP 1 | KOP 3 | KOP 4 | Summary/Maximum Glare Effect |
|---|---|---|---|---|
| Single-Axis Tracking | Minor glare for 10 to 30 minutes between 7:00 am and 9:00 am daily in late March to late April and in late August to late September | Minor glare for up to 20 minutes between 7:00 am and 9:00 am daily from April until mid-September<br>Minor glare from 8:00 am to 11:00 am in late March to late April and late August to late September | Minor glare from 8:00 am to 2:00 pm daily in mid-March and mid-September<br>Minor glare from 6:00 am to 7:00 am and from 4:00 pm to 5:00 pm daily from April through September | Minor glare<br>Max daily: 6 hours per day for 3 weeks per year<br>Max annual: 1 hour per day for 6 months per year |
| Fixed Tilt at 20 degrees | Moderate glare for up to 10 minutes between 5:00 pm and 6:00 pm daily from April through September | Moderate glare for up to 10 minutes between 5:00 pm and 6:00 pm daily from April through September | Moderate glare daily for 20 minutes between 5:00 pm and 6:00 pm from March through October | Moderate glare<br>Max daily and annual: 20 minutes per day for 8 months per year |
| Fixed Tilt at 40 degrees | Moderate glare for 20 minutes between 4:00 pm and 6:00 pm daily from late March through mid-September | Moderate glare for 20 minutes between 4:00 pm and 6:00 pm daily from late March through mid-September | Moderate glare for 30 minutes between 3:00 pm and 6:00 pm daily from March through October | Moderate glare<br>Max daily and annual: 30 minutes per day for 8 months per year |
| Fixed Tilt at 60 degrees | Minor glare from 3:00 pm to 4:00 pm daily from mid-March to mid-April and mid-September<br>Moderate glare from 3:30 pm to 6:00 pm daily from mid-March to mid-April and mid-September | Minor glare from noon to 3:30 pm daily from mid-March through mid-April<br>Moderate glare from 3:30 pm to 6:00 pm daily from mid-March through mid-April and in September | Minor glare from 10:00 am to 3:30 pm daily in mid- to late March and mid- to late September<br>Moderate glare from 3:30 pm to 6:00 pm daily in mid- to late March and mid- to late September | Moderate glare<br>Max daily and annual: 2.5 hours per day for 2 months per year |

NOTE:
minor glare = low potential for temporary after-image
moderate glare = potential for temporary after image
Unless otherwise noted, glare is expected to be present continuously between the hours listed. All times associated with glare are denoted in Pacific Standard Time.

SOURCE: Forge Solar 2018

### *Decommissioning and Site Restoration*

Decommissioning would remove Project-related structures and infrastructure so that the affected lands could be restored to their original natural state. However, until 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 and areas of new ground disturbance would be visible. Indirect effects could include the disturbance of cryptobiotic soil crusts that may be present throughout the Project site, which affects seed germination, reduces soil nutrition and carbon sequestration, and renders the soil vulnerable to water and wind erosion—all of which would hinder vegetation reestablishment. Implementation of Mitigation Measures VIS-1 and VIS-5 would reduce the visual effects of decommissioning. Mitigation Measure VIS-5 would require the Decommissioning and Site Reclamation Plan to include reclamation of the area of disturbed soils used for laydown, Project construction, and siting of the other ancillary operation and support structures. Further, upon decommissioning, Mitigation Measure VIS-5 would reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. It would require replacement of soil, brush, rocks, and natural debris over disturbed areas. Newly introduced plant species would be of a form, color, and texture that blends with the landscape. These measures would ensure the visual impacts of decommissioning are minor and short term.

## 3.17.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2, and DE-3 in Table 3.17-5) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.17-5 summarizes the change in visual impacts under Alternative B, by Design Element.

**TABLE 3.17-5**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Visual Resources | Minor reduction | Minor increase | Minor increase |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

### *Construction, Operation, and Decommissioning*

As described in Section 2.5, the Alternative B Design Elements would largely avoid grading, trenching, and vegetation removal during construction. Impacts associated with construction would be reduced compared to Alternative A at least until the panels were constructed, because less grading and overall ground and vegetation disturbance would occur (DE-1). The impacts during operations would be greater than Alternative A, because electrical wiring would be aboveground (DE-2) on 1,000 wooden poles 30 to 50 feet tall which would add to the visual contrast from Alternative B. Slightly fewer roads would be compacted and graded under Alternative B compared with Alternative A and the exact locations of the roads may differ. Because the primary source of the visual contrast identified for Alternative A is the solar PV panel arrays, which would be present in the same locations and overall configurations under Alternative B, the visual contrast summarized in Table 3.17-3 would be similar under Alternative B as under Alternative A. Alternative B would result in strong contrast as viewed from KOPs 1 and 4, resulting the same impacts with respect to the change in visual values and conformance with VRM Class IV objectives as Alternative A and would be subject to the same mitigation requirements as a result. Night lighting and glint and glare effects would be the same as Alternative A. Following decommissioning, Alternative B would result in less long-term visual contrast on the Project site as a result of reduced grading and vegetation removal, allowing for reestablishment of natural vegetation cover with less restoration effort and in a shorter timeframe compared to Alternative A. Mitigation Measures AQ-1, BIO-18 and VIS-1 through VIS-5 would be applicable to Alternative B.

## 3.17.4.3 Alternative C: Reduced Acreage Alternative

### *Construction, Operation, and Decommissioning*

As described in Section 2.6, Alternative C would be similar to Alternative A, but would consist of a minimized footprint that would reduce ground disturbance within key areas containing sensitive vegetation, sand dune habitat, and cultural resources. All construction methods for Alternative C would be the same as described under Alternative A, although as described in Section 2.6, Unit 1 may be constructed separately from Unit 2, resulting in a difference in overall timing and phasing of construction. Although Alternative C would consist of 460 fewer acres of development compared to Alternative A, the areas avoided under this alternative primarily are within an interior portion of the northeastern end of the Project site and near the Colorado River Substation, as shown in Figure 2-4, and the overall geographic size and exterior boundaries of the Project site would remain similar to Alternative A, particularly from the vantage point of the KOPs. The overall visual contrast created by the solar PV arrays would be similar to that described for Alternative A, and thus the visual contrast summarized in Table 3.17-3 would be the same. Figures 3.17-7 through 3.17-11 show visual simulations of Alternative C from KOP 4, and include the several possible outcomes including fixed-tilt and tracking arrays and each unit individually as well as in combination. If Unit 1 or both units are constructed, Alternative C would result in strong contrast as viewed from KOPs 1 and 4, resulting the same impacts with respect to the change in visual values and conformance with VRM Class IV objectives as Alternative A and would be subject to the same mitigation requirements as a result. Night lighting and glint and glare effects would be similar for Unit 1 of

Alternative C; avoiding the 460 acres removed from this site configuration would not eliminate or substantially reduce any instances of glare described in Table 3.17-4 (Forge Solar 2018). If only Unit 2 is constructed, overall visual contrast would be weak as the Unit 2 components would appear similar in size, location, and nature to the existing infrastructure at and around the Colorado River Substation, and no glare would occur. Mitigation for night lighting and building, substation, and overhead line components would be applicable. Decommissioning effects would be the same as described for Alternative A, with the exception that the avoided portion of the Project site would not need to be restored because no vegetation removal would have occurred there.

### 3.17.4.4 Alternative D: No Plan Amendment/No Action/No Project

#### *Construction, Operation, and Decommissioning*

Under the No Plan Amendment/No Action/No Project Alternative, no development would occur. Under this Alternative, the visual appearance of the site would not change from existing conditions, and the existing environmental setting would be maintained. The No Plan Amendment/No Action/No Project Alternative would cause no change relative to baseline conditions and would not result in the visual impacts described for the Project. The No Plan Amendment/No Action/No Project Alternative would meet VRM Class objectives because no new contrast would be introduced.

## 3.17.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on Visual Resources if it would:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, or other locally recognized desirable aesthetic natural feature within a state-designated scenic highway,

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (i.e., public views experienced from publicly accessible vantage point).

d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

### 3.17.5.1 Alternative A: Proposed Action

**Impact 3.17.5a: Would the Project have a substantial adverse effect on a scenic vista? (*Less than significant*)**

#### Construction, Operation, and Decommissioning

In Riverside County, scenic vistas are considered points that provide a view of the countryside and are accessible to the general public, and the County's objective is to conserve the skylines, view corridors, and outstanding scenic vistas within the county (Riverside County 2015). I-10 is designated as a County Eligible Scenic Highway in Riverside County General Plan (Riverside County 2016), and based on these criteria, I-10 could be considered to provide scenic vistas with the Mule Mountains being part of the countryside.

Existing development (e.g., utility poles) obscures views of the Mule Mountains from KOP 2 (Figure 3.17-3). This Project, if constructed, would not introduce a new strong visual contrast detracting from views of the countryside at this location. Project construction and operation would result in weak to moderate visual contrast compared with the current condition. Project construction activities, graded/cleared areas, panels, and structures would contrast at a moderate level against the primarily natural setting of the Chuckwalla Valley and the Palo Verde Mesa during all project phases. The overall visual contrast of cleared areas would be weak, as views of the ground-plane would be largely shielded by vegetation for viewers situated at-grade along I-10. For viewers situated at higher elevations along I-10, the visual contrast of the Project would be weak to moderate. Viewer exposure would be transient and would be experienced at high speeds while traveling along I-10.

Based on shielded views of the Project site and its distance from locations where it would be visible, combined with the transient and brief view exposure, the presence of the Project would be noticeable, but would not substantially obstruct, interrupt, or detract from the scenic vistas from I-10. Therefore, Project-related impacts to this County-designated scenic corridor would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.17.5b: Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state designated scenic highway? (*No impact*)**

#### Construction, Operation, and Decommissioning

There are no designated state scenic highways from which the Project would be visible; the nearest is Highway 62, about 35 miles north of the Project site, on the north side of the Big Maria Mountains (Caltrans 2018). Therefore, construction, operation, maintenance, and decommissioning of the Project would have no impact with respect to damaging scenic resources within a state scenic highway. Potential impacts on I-10, a County Eligible Scenic Highway, are discussed under Impact 3.17.5a.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.17.5c: Would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (*Less than significant with mitigation incorporated*)**

#### Construction

The general visual contrast created by vegetation stripping and the presence of construction materials, equipment, and partially constructed facilities would contribute to the visual contrast apparent in the landscape, a potentially significant impact. Earthwork and vegetation manipulation strategies in Mitigation Measures VIS-1 and VIS-2 would reduce the contrast created in earth-moving and vegetation clearing. They would reduce visual impacts during and after construction by requiring measures such as feathering the edges of areas graded and grubbed for construction to reduce form and line contrasts; preserving existing rocks, native vegetation, drainage patterns, and other natural characteristics to the extent feasible; and minimizing evening lighting. Areas disturbed by construction activities that would not be needed during operation and maintenance would be revegetated according to Mitigation Measures VIS-2 and BIO-18, which requires implementation of a Restoration Plan. The potential for significant visual effects from airborne dust during construction would be reduced with the implementation of Mitigation Measure AQ-1, which requires implementation of a dust control plan. These mitigation measures would reduce construction period visual impacts to a less-than-significant level.

#### Operation and Maintenance

As described in Table 3.17-3 and depicted in Figures 3.17-2 through 3.17-5, moderate to strong visual contrast was identified under certain conditions at KOPs 1 through 4. From various positions at these KOPs, views of the Project would be blocked by the intervening topography and vegetation, or would result in a weak visual contrast. From locations representing the viewer experience of recreational users or roadway travelers, such as

KOP 2 on I-10, predominant viewer exposure is expected to be transient. However, strong visual contrast at KOP 4 is expected to be sustained given the high elevation vantage point of this location, and the unfettered views across the valley. Because of the sensitivity of this site, the impact of strong visual contrast of the solar arrays as viewed from this location would be significant. To reduce these visual impacts, Mitigation Measure VIS-1 requires a number of design elements be integrated into the final project design, including color treatment of solar array frames, rear surfaces of the modules, and tracker structures if applicable. In addition, Mitigation Measure VIS-3 would require maintenance and monitoring of VRM mitigation compliance, including revegetation and long-term maintenance of color-treated facilities to reduce contrast. With implementation of siting and design measures addressing roadway contrast, color treatments, lighting, vegetation management, and facility elements, the visual impact of the Project while in operation would be reduced to less than significant.

### Decommissioning and Site Restoration

Decommissioning would remove Project-related structures and infrastructure and implement site restoration plans so that affected lands could naturalize. However, until 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 vegetation and soil crusts. The resulting visual contrast would create a significant impact. Implementation of Mitigation Measures VIS-1, which would require coordination of the VRM mitigation strategy BLM landscape architects and confirm the compliance checking schedule and procedures, and VIS-5, which would require the Decommissioning and Site Reclamation Plan, would ensure the visual impacts of decommissioning are minor and short-term by requiring restoration of the visual elements of form, line, color, and texture; removal of aboveground structures; and contouring, replacement of salvaged topsoil, and revegetation of disturbed areas. As a result, the Project would not substantially degrade the existing visual character of quality of the Project site, and impacts would be less than significant with mitigation incorporated.

### Mitigation Measures

Implement Mitigation Measures AQ-1 (Dust Control Plan); BIO-18 (Restoration Plan); VIS-1 (Design); VIS-2 (Construction); VIS-3 (Operation and Maintenance); and VIS-5 (Decommissioning and Site Reclamation).

### Significance after Mitigation

This impact would be less than significant after implementation of the mitigation measures listed above.

**Impact 3.17.5d: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (*Less than significant with mitigation incorporated*)**

### Construction

As described in Section 3.17.5.1, the relatively short daily duration of seasonal early evening lighting would not cause substantial night lighting effects. No nighttime (i.e., from 7 p.m. to sunrise) lighting is proposed during construction. Therefore, the potential for nighttime lighting during construction to impact nighttime views would be minimal; however, the impact on evening views (i.e., seasonally from sundown to 7 p.m. when construction ends) could be significant due to the sensitivity of viewer groups such as recreational users. users Mitigation Measure VIS-2 would reduce night lighting impacts during construction by minimizing the number and brightness of lights and prohibiting the use of lighting outside of construction hours unless controlled by a timer or motion detector. With implementation of this mitigation measure, construction lighting impacts would be less than significant.

Construction would involve increased vehicle traffic and the transport and use of construction equipment and materials. These activities would temporarily increase glare conditions near the Project site due to an increase in reflective materials on the Project site, such as construction equipment and vehicles. However, any increases in glare that would result from construction activities would be minimal because only portions of the Project site would be actively under construction at any particular time. Any new temporary sources of glare would not be in any one fixed location and would be present at different locations according to the location of construction activities throughout the site. As a result, the impacts attributable to glare would be less than significant.

#### Operation and Maintenance

As described in Section 3.17.5.1, lighting would be limited to areas required for operations or safety, directed on-site to avoid backscatter, and shielded from public view to the extent practical. While the level of light would be low, the Project would be in an area with few existing structures and light-sensitive uses. Therefore, impacts off night lighting could be significant. Implementation of the Implementation of the lighting plan required by Mitigation Measure VIS-1 would reduce operational night lighting impacts to less than significant by ensuring that light does not spill beyond the Project boundary, that light colors are minimally disruptive to night views, and that lights remain off when not in use.

As shown in Table 3.17-4 and described in Section 3.17.5.1, the single-axis horizontal tracking system would result in minor glare, while fixed-tilt arrays could result in moderate glare that could result in a temporary after-image, with a 60-degree fixed tilt option resulting in the most intense and longest-lasting glare among all options. None of the options would introduce a visual hazard due to glare, but each could intermittently increase the visual contrast of the Project site within the landscape (e.g., between 20 minutes and 6 hours per day for several months per year). Although Project-caused glare would be low in intensity and of short duration, the potential impact could be significant due to the sensitivity of viewer types such as recreational users or people accessing cultural sites. Mitigation Measure VIS-4 would reduce glare impacts during operation to less than significant by requiring tracker arrays, if used, to turn away from affected KOPs when glare is anticipated.

#### Decommissioning and Site Restoration

The impacts of both light and glare during decommissioning and site restoration are anticipated to be similar to those of construction. Decommissioning is not likely to include nighttime activities and would not create a source of lighting that would impact nighttime views. Although decommissioning activities would require the use of vehicles and equipment similar to that required for construction, any sources of glare would minimal and temporary and equipment would be moved between active working locations on the Project site. As a result, the Project would not cause significant glare or lighting impacts and impacts would be less than significant.

#### Mitigation Measures

Implement Mitigation Measures VIS-1 (Design); VIS-2 (Construction); and VIS-4 (Glint and Glare).

#### Significance after Mitigation

This impact would be less than significant after implementation of the mitigation measures listed above.

## 3.17.5.2 Alternative B: Alternative Design

### *Construction, Operation and, Decommissioning*

Alternative B would have the same less-than-significant impact on scenic vistas (i.e., views from I-10) as Alternative A (Impact 3.17.5a) and would have no impact on visual resources from a state scenic highway (Impact 3.17.5b). As described in Section 3.17.4.2, because the primary source of the visual contrast identified for Alternative A is the solar PV panel arrays, which would be present in the same locations and overall configurations under Alternative B, the visual contrast summarized in Table 3.17-3 would be the same under Alternative B as under Alternative A. Construction impacts would be similar to those described for the Project, but decommissioning impacts would be reduced as a result of the reduced grading and vegetation removal under this alternative, allowing for reestablishment of natural vegetation cover with less restoration effort and in a shorter timeframe compared to Alternative A. Overall, the significance conclusions for the impacts identified for each phase of Alternative B (construction, operation and maintenance, decommissioning) would be the same as those described above for Alternative A (Impact 3.17.5c) and would be less than significant with mitigation incorporated. Night lighting and glint and glare impacts (Impact 3.17.5d) would be the same as for Alternative A, and would be less than significant with mitigation incorporated.

### 3.17.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would be similar to Alternative A, but would consist of a minimized footprint that would reduce ground disturbance within key areas containing sensitive vegetation, sand dune habitat, and cultural resources. Alternative C would reduce developed areas within the Project site; therefore, impacts associated with construction would be less than Alternative A. As described in Section 2.6, Unit 1 may be constructed separately from Unit 2, resulting in a difference in overall timing and phasing of construction.

Alternative C would have the same less-than-significant impact on scenic vistas (i.e., views from I-10) as Alternative A (Impact 3.17.5a), and would have no impact on visual resources from a state scenic highway (Impact 3.17.5b). As described in Section 3.17.4.3, because the primary source of the visual contrast identified for the Project is the solar PV panel arrays, which would be present in the same locations and overall configurations under Unit 1 of Alternative C except the interior portions of the Project site avoided under this alternative, the visual contrast summarized in Table 3.17-3 would be the same under Unit 1 of Alternative C as under Alternative A. If only Unit 2 is constructed, overall visual contrast would be weak as the Unit 2 components would appear similar in size, location, and nature to the existing infrastructure at and around the Colorado River Substation. Mitigation for night lighting and building, substation, and overhead line components would be applicable to Unit 2 of Alternative C. Construction and decommissioning impacts would be similar to those described for Alternative A. Overall, the significance conclusions for the impacts identified for each phase of Alternative C (construction, operation and maintenance, decommissioning) would be the same as those described above for Alternative A (Impact 3.17.5c) and would be less than significant with mitigation incorporated. Night lighting and glint and glare impacts (Impact 3.17.5d) would be similar to Alternative A except that no PV-related glare would occur if only Unit 2 is constructed, and impacts would be less than significant with mitigation incorporated.

### 3.17.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no impact on visual resources would occur because no facilities would be constructed, operated and maintained, or decommissioned.

## 3.17.6 Cumulative Effects

### 3.17.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

Numerous reasonably foreseeable future actions identified in Table 3.1-1 are located within 20 miles of the proposed Project (i.e., the Project-specific study area within which views of the Project may occur) and therefore have the potential to contribute to the same types of visual impacts as the Project within the same area that the Project may also be visible. These include 14 solar energy projects at some stage in permitting or development, 3 approved or operational electrical transmission lines, a power plant, a communication tower, and residential development in Blythe.

The Project, combined with other planned energy and infrastructure projects, has the potential to result in strong visual contrast that extends across a large geographic area. Collectively, cumulative impacts could change the landscape from one that is primarily undeveloped and natural in appearance to one that is more developed with an industrial character (i.e., energy production). Cumulative impacts, as measured by visual contrast, are expected to be strongest where viewed from superior viewer positions, such as the higher elevations and mountain ranges. From these viewer positions, facilities would appear large in scale and areal extent, occupying the majority of lowland areas within the cumulative project area. Also consistent with this Project-specific analyses, visual contrast would be reduced when viewed from low oblique angles within the valley, which would shorten a viewer's line of sight, and geographic extent of impacts would appear smaller. Though variations in perceived visual contrast exist depending on specific viewer positions, impacts would be expected to involve major modification of the existing character of the landscape and would likely dominate the views from nearby locations.

Additional impacts would occur as a result of the construction, operation, and decommissioning of related facilities, such as access roads and electric transmission lines. While the primary visual impacts associated with solar energy development within the solar energy zone would occur during daylight hours, lighting required for utility-scale solar energy facilities would be a potential source of visual impacts at night.

In summary, cumulative impacts would be high intensity, resulting from strong visual contrast and scale dominance of energy and infrastructure projects. Viewer duration could be prolonged, and within the foreground-middleground distance zone. Long-term or permanent impacts would be regional or extended in geographic extent. Impacts would affect areas defined as having outstanding or high visual values (important or unique). The incremental contribution of the Project to overall cumulative impacts would be moderate and impacts would be less than significant.

### 3.17.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative B to cumulative impacts would be the same as described for Alternative A in Section 3.17.7.1, with the exception that, because of the reduced grading and vegetation removal, site restoration following decommissioning would return the site to a natural pre-construction state more quickly. Therefore, overall cumulative impacts also would be the same, though the contribution of Alternative B would not be as long-lasting within the landscape following decommissioning.

### 3.17.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

The contribution of Alternative C to cumulative impacts would be the same as described for Alternative A in Section 3.17.7.1; therefore, overall cumulative impacts also would be the same.

### 3.17.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under the No Plan Amendment/No Action/No Project Alternative, no impact on visual resources would occur because no facilities would be constructed, operated and maintained, or decommissioned. If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, no contribution to a cumulative impact would occur.

## 3.17.7 Residual Effects

With the implementation of mitigation measures, residual impacts to visual resources would remain. The presence of the Project, as mitigated, would not only alter the physical characteristic of the landscape, but also would change the scenic values and experiences of visually sensitive users. The implementation of Mitigation Measures VIS-1 through VIS-5 would reduce, but not completely eliminate, adverse impacts on visual resources visible from the KOPs and the I-10 corridor because overall visual contrast would remain strong even after reductions from the mitigation measures. These residual impacts of the Project and alternatives would not be significant, but cannot be completely avoided.

# 3.18 Water Resources

## 3.18.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects and residual effects concerning water resources. The regulations applicable to this analysis are summarized in Appendix E.

The analysis presented herein is based on the following reports:

- AECOM 2018a. Water Demand Analysis. RE Crimson Solar Project. October 2017.
- AECOM 2018b. Water Supply Assessment. RE Crimson Solar Project. December 2018.
- Westwood 2018. Phase C Hydrology Study RE Crimson Solar Project. May 2018.

Full copies of these reports are provided in Appendix U.1, U.2, and U.3.

## 3.18.2 Regional and Local Environmental Setting

### 3.18.2.1 Regional

The Project site is located in eastern Riverside County in the eastern portion of the Chuckwalla Valley between the Chuckwalla and Palen Mountains approximately 20 miles southeast from the southern edge of Palen Dry Lake. The elevation of Chuckwalla Valley ranges from under 400 feet above mean sea level at Ford Dry Lake to approximately 1,800 feet west of Desert Center and along the upper portions of the alluvial fans that surround the valley perimeter. The surrounding mountains rise to over 3,000 feet. Hydrologically, the Project site is located in the Colorado River Basin within the Chuckwalla Valley Drainage Basin. This is an internally drained basin and all surface water flows to Palen Dry Lake in the western portion of Chuckwalla Valley and Ford Dry Lake in the eastern section of Chuckwalla Valley.

The distinctive bi-modal climate of the Sonoran Desert, with a rainy season in both winter and summer, distinguishes it from most of California, where warm dry summers and a single rainy season in winter are more common. In addition to being hotter and drier, the Sonoran Desert region also rarely experiences frost. Average annual precipitation ranges up to 4 inches.

### 3.18.2.2 Local

#### *Surface Water*

The Project site is within the eastern edge of the Chuckwalla Valley Drainage in the Colorado River Hydrologic Basin Planning Area. Palen Dry Lake and Ford Dry Lake represent the lowest elevations within the basin. The ground surface elevations at the site range from approximately 420 to 690 feet above mean sea level. Desert washes within this region usually carry no surface flow, but can occasionally carry dramatic high-discharge floods. The Project site lies between the alluvial fans emanating from the Chuckwalla Mountains to the southwest and the Palen Mountains to the north. The Project site supports a broad alluvial fan that includes braided washes and channels that converge into a primary channel flowing into a playa lake northwest of the site. There are no perennial streams in Chuckwalla Valley (California Department of Water Resources [DWR] 2004). Most of the flows in the vicinity of the site are conducted largely through a wash known as Wiley's Wash, located northwest of the site, which empties into a dry lakebed (Westwood 2018). According to a desktop evaluation of jurisdictional waters, there are small portions in the eastern part of the site that are part of the Imperial Reservoir Subbasin, which contains the Colorado River, but drainage occurs as small ephemeral channels that have no hydrologic connection to the Colorado River (AECOM 2017).

On-site flow is conveyed as overland flow and also in a series of washes that originate in the Mule Mountain Range and are relatively defined as they enter the upstream portion of the Project site. However, the nature of the washes is that they fan out and become less defined as flow travels downstream and eventually flow becomes alluvial (AECOM 2018b). The northern portion of the site and off-site tributary area drains primarily to an existing depression area outside of the Project site boundary. Stormwater will pond in the depression prior to flowing northwest to the existing Ford Dry Lake or to the northeast.

The Project site does not contain or connect to waters of the U.S. as defined by 40 CFR 230.3(s), as there is no perennial connectivity between waters of the U.S. and the Project site. Therefore, surface water resources at the Project site are not regulated by the U.S. Army Corps of Engineers. An Approved Jurisdictional Determination was issued for the Project in October 2018 by the U.S. Army Corps of Engineers (Appendix U.4).

### *Groundwater*

The Project site lies primarily within the Chuckwalla Valley Groundwater Basin (CVGB) (Figure 3.18-1), which is bounded by consolidated rocks of the Chuckwalla, Little Chuckwalla, and Mule Mountains on the south; Eagle Mountains on the west; and Mule and McCoy Mountains on the east (DWR 2004). The water-bearing units include continental deposits divided into alluvium, the Pinto Formation (coarse-grained alluvium or fanglomerate that include large boulders and lacustrine clays) and the Bouse Formation (older fanglomerate containing coarse alluvial deposits). The maximum thickness of these deposits is about 1,200 feet. The basin is recharged by subsurface inflow from the Pinto Valley and Cadiz Valley Groundwater Basins as well as percolation of runoff from the surrounding mountains (DWR 2004). The total storage capacity of the CVGB is estimated at 9.1 million acre-feet (AF). The upper 100 feet of saturated sediments are estimated to have 900,000 AF of groundwater in storage and total recharge is estimated to be 3,737 acre-feet per year (AFY) (DWR 2004 and AECOM 2018b).

According to groundwater level data from DWR (2018), there is a well relatively close (approximately 1 mile northwest) to the Project site (Well 335839N1148919W001). Groundwater level monitoring for this well indicates that historical water levels, dating from 1961 to 1979, were relatively stable at approximately 150 feet below ground surface (DWR 2018). In addition, two wells located approximately 3 miles west of the site (Nos. 335373N1148999W001 and 333214114535501) also show consistent water levels of approximately 250 feet below ground surface from 2005 to 2010. Readings in August 2019 at well No. 333214114535501 showed a water level of about 235 feet below ground surface, and at well No. 333400114444701 the water level was 136 feet below ground surface (USGS 2019a, 2019b).

The eastern portion of the Project site, and an existing off-site well located approximately 4 miles northeast of the Project that may be used for the Project water supply, are located in the Palo Verde Mesa Groundwater Basin (PVMGB). This alluvial-filled valley covers 353 square miles and is separated from the CVGB by the McCoy and Mule Mountains. Groundwater recharge is primarily provided by percolation of runoff from the surrounding mountains and hills as well as precipitation to the valley floor and subsurface inflow through a gap in the McCoy and Mule Mountains. Subsurface inflow is estimated to be 400 acre-feet per year (AFY) and total natural recharge at 800 AFY (AECOM 2018b). The total recharge to the PVMGB is estimated to be 4,761 AFY with a total storage capacity of 6.84 million AF (AECOM 2018b). Groundwater is produced by one main aquifer within the PVMGB found in Quaternary-age alluvium and there are no known barriers to inhibit groundwater flow (AECOM 2018b).

### *Flooding*

The Federal Emergency Management Agency (FEMA) produces Flood Insurance Rate Maps (FIRMs) to identify flood zones and areas that are susceptible to 100-year and 500-year floods. According to FEMA FIRM Panel 06065C3200G, the Project site is not located within a FEMA Special Flood Hazard Area, which includes all types of 100-year flood zones. The entire region is designated as FEMA Flood Hazard Zone D – Area of Undetermined Flood Hazard. According to the hydrologic analysis for the site, modeling indicates that during a 100-year storm event the flood depths across the majority of the site are less than 0.5 feet with relatively low velocities. The maximum flood depth in isolated areas within the model study area is approximately 1.5 feet; however, these are outside of the Project site boundary. (Westwood 2018)

## 3.18.3 Analytical Methodology

This section presents the analysis of direct and indirect impacts of the Project and alternatives on water resources, including the Project's potential to adversely affect groundwater supplies, alter geomorphic features/processes, modify drainage and flooding conditions, induce erosion and sedimentation, and degrade water quality. The analysis also considers the potential for incremental impacts of the Project to combine with impacts of other projects and activities to adversely affect water resources. Mitigation measures to avoid or reduce potential impacts are identified, as applicable, and the potential for residual impacts is evaluated.

## 3.18.4 Direct and Indirect Effects

### 3.18.4.1 Alternative A: Proposed Action

#### *Construction*

Actions that involve or are expected to involve discharge of waste may be subject to waste discharge requirements under the Porter-Cologne Act. Chapter 4, Article 4 of the Porter-Cologne Act (Water Code §§13260-13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable Regional Water Quality Control Board (RWQCB). The Project does not propose discharging waste that could affect the quality of waters of the state. However, Project construction would require earthwork activities that involve the use of heavy machinery to clear and grade the site and install the Project components. These activities would loosen surface soils and sediments, increasing the potential for erosion during storm events, along with associated effects such as increased downstream sediment yields from on-site disturbed areas.

No waters of the U.S. are present within the Project site; therefore, Section 402 of the Clean Water Act does not apply and the Applicant would not be required to obtain a National Pollution Discharge Elimination System (NPDES) permit for construction. Mitigation Measure BIO-14 requires that the Applicant prepare and implement a Storm Water Management Plan and a Drainage, Erosion, and Sediment Control Plan [DESCP]. The Storm Water Management Plan would be prepared by a qualified engineer or erosion control specialist and include BMPs to prevent soil erosion and the discharge of other construction-related pollutants that could contaminate nearby drainages. The Storm Water Management Plan would apply to all phases of construction. The 30-percent design DESCP already developed for the Project site includes several erosion control BMPs such as temporary silt fencing, temporary rock construction entrance, and permanent stabilized construction roadways (see AECOM 2018b, Appendix U.5 for details).

In addition, Waste Management and Materials Pollution Controls would be implemented as described in the DESCP to address the potential that Project construction and decommissioning activities could result in the accidental release of hazardous or potentially hazardous materials and degrade water quality. The contractor would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. The Project proponent would provide the DESCP to all contractors working on the Project site and would ensure that a copy is available at the Project site at all times.

With implementation of Mitigation Measure BIO-14, which includes implementation of the Storm Water Management Plan and the DESCP, and the HMBP, construction activities would protect the quality of receiving waters such that there would be no adverse effects.

During construction, up to 1,000 AF of water would be used for dust control and for compacting soils as part of grading activities (Sonoran West Holdings, LLC 2019). Water would be sourced from a potential on-site groundwater well within the CVGB or PVMGB, from an off-site well within the PVGB, or trucked in by an off-site water purveyor (i.e., the Palo Verde Irrigation District [PVID], which sources water from the Colorado River under an existing high priority water right). If the CVGB is used as a water source, when spread over the

2-year construction period, this would represent about 13 percent of annual recharge to the CVGB. If the PVMGB is used as a water source, this would represent about 11 percent of annual recharge to the PVMGB. The U.S. Geological Survey (USGS), in cooperation with the BLM, initiated a groundwater monitoring program to evaluate the hydrogeology of the CVGB in light of the interest in solar energy development within the basin (USGS 2013). The DWR reports that groundwater levels in the basin were generally stable between the early 1950s and 1962, and more recent data on local wells also demonstrate stable groundwater levels (DWR 2018), indicating that discharge and recharge were roughly balanced during that period (USGS 2013). DWR also reports that groundwater level trends in the PVMGB are relatively stable (DWR 2004). Therefore, considering the temporary demand for water during construction, the total quantity needed compared to the total annual recharge and amount of groundwater in storage, and the relative stability of groundwater levels in the basins, there would be no adverse effects related to overall groundwater levels from Project construction.

Nonetheless, drawdown in the immediate vicinity of the well(s) used to produce groundwater for the Project may have the potential to adversely affect nearby wells by lowering localized water levels such that pumping rates decline. Consequently, BLM would require implementation of Mitigation Measure WAT-1, which includes the development and implementation of a Groundwater Monitoring, Reporting, and Mitigation Plan prior to the onset of groundwater pumping for Project construction; the plan would provide a detailed methodology for monitoring site groundwater levels and comparisons for levels within the basin, including identification of the closest private wells to the Project site. If monitoring identifies an adverse effect on nearby wells, cessation of pumping and/or compensation for equipment to improve nearby wells would be required to mitigate the impact.

The Project site is located just outside the edge of the floodplain of the Colorado River and possibly within what is known as the "accounting surface" of the Colorado River aquifer (USGS 2009), defined to represent the elevation and slope of the static water table in the river aquifer outside the flood plain that would exist if the water in the river aquifer were derived only from the river. Wells that yield water from the river water aquifer are replaced by water from the Colorado River. Wells that have a static elevation above the accounting surface are presumed to yield water that will be replaced by water from precipitation and inflow from tributary valleys. Therefore, while a well may have a static elevation above the accounting surface, pumping could theoretically bring that water level below the accounting surface, resulting in water that would require replacement by Colorado River water due to the hydraulic connection of the river and groundwater.

The BLM recognizes disagreement among water resource professionals as to whether there is hydrologic connectivity between the PVMGB, which underlies the eastern portion of the Project site as well as the existing offsite well that could be used, and the Colorado River via the intervening Palo Verde Valley Groundwater Basin (PVVGB) (Godfrey et al. 2013). After thorough review and consideration of input received during the formal comment period on the McCoy Solar Energy Project Draft EIS, BLM concluded that the data do not demonstrate that connectivity exists. 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 have 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. 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. 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 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. However, the fact that connectivity has not yet been demonstrated does not preclude the possibility that connectivity could be shown in the future. If Project-related groundwater use could induce flows from the Colorado River into the PVMGB, any resulting use of Colorado River water without an entitlement could be considered to violate the Law of the River (Colorado River Compact of 1922 and amendments).

The USGS gives the Colorado River Accounting Surface elevation in the CVGB in the area of the Project site as 238 to 240 feet above mean sea level (USGS 2009). The Project site surface elevations range from 420 to 690 feet above mean sea level (see Appendix M). With groundwater at about 235 to 250 feet below ground surface in the CVGB near the Project site (USGS 2019a), if a well is placed on-site within the portion of the site underlain by the CVGB, there is some potential that groundwater may be taken from below the accounting surface.

Although it is considered unlikely that the Project would withdraw groundwater from below the Colorado River Accounting Surface if a well within the PVMGB is used, due to the potential to withdraw water from the CVGB and the potential river compact violation that would occur if withdrawal from below the Colorado River Accounting Surface were to happen, the BLM would require implementation of a mitigation measure to monitor and prevent or quickly remedy this possibility. Mitigation Measure WAT-2 would require the implementation of a plan to account for any water that might come from the Colorado River, demonstrate the availability of and provide replacement on an acre-foot to acre-foot basis. If this were to occur, this impact would be reduced by identifying the Colorado River accounting surface at the location of the well that would supply the Project, and replacing any amounts of water withdrawn at or below that accounting surface level from an outside source.

### *Operation*

The Project site is currently undeveloped and the surface is pervious. The Project would introduce new impervious surfaces from photovoltaic (PV) panel arrays, roofs, inverter foundations, and compacted or paved access roads. The new surfaces could locally increase the rate and frequency of runoff. Stormwater runoff would be maintained as sheet flow where possible by minimizing the amount of grading, with water exiting the site through existing drainages. The Project would include drainage control features (e.g., permanent low water crossings, permanent stabilized construction roadways, use of soil binders, revegetation) that would limit erosion and other adverse effects associated with stormwater runoff. The operations and maintenance management controls include erosion and sediment control BMPs; an employee training program; preventive maintenance programs; structural BMPs, including temporary containment during maintenance activities and permanent secondary containment structures at chemical storage and process areas; materials, equipment and vehicle management practices; spill prevention and response programs; and inspection programs.

The Storm Water Management Plan developed for the site, as required by Mitigation Measure BIO-14, would include post-construction measures to manage stormwater and minimize changes in the existing drainage patterns, so that natural stormwater could flow through the site to the greatest practical extent. It is considered unlikely that substantive changes would occur with respect to the quantity or quality of runoff at the site compared to existing conditions because of the nature of the proposed improvements that are spread out across a wide area and confirmed by hydraulic modeling.

During operations, water would be required for module washing and maintenance, and for substation restroom facilities. The Project would require approximately 22 AFY of water for module washing and other uses.[1] The water for operations would be obtained from an on-site or off-site groundwater well, or trucked from PVID. Compared to the total annual recharge in each potential groundwater basin (3,737 to 4,761 AF), the relatively small annual demand would be met without causing any adverse effects on groundwater levels in the basin.

### *Decommissioning*

Decommissioning activities would conform to a Storm Water Management Plan, as required by Mitigation Measure BIO-14, and would include BMPs to minimize erosion, sedimentation, or the release of hazardous materials. Adherence to the Storm Water Management Plan and all applicable regulatory requirements would ensure that decommissioning activities would not adversely affect water resources.

Decommissioning activities would be short term and would require about the same amount of water as construction on a monthly average, primarily for dust suppression. Therefore, considering the temporary demand for water during decommissioning activities, the total quantity needed which compared to the total

[1] The results of the Water Demand Analysis are within the range of that evaluated for four other solar facilities located in the PVMGB and CVGB (AECOM 2018a).

annual recharge and amount of groundwater in storage, and the relative stability of groundwater levels in the basin, decommissioning would not result in an adverse effect on water levels.

### 3.18.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of three Design Elements (presented as DE-1, DE-2 and DE-3 in Table 3.18-1) that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.18-1 summarizes the change in effects on water resources under Alternative B by Design Element.

**TABLE 3.18-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Surface Water | Minor reduction | Minor reduction | Minor reduction |
| Groundwater | Minor reduction | Minor reduction | Minor reduction |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

Implementing DE-1, DE-2, and/or DE-3 would result in a smaller area of ground disturbance compared to Alternative A with less potential for erosion and a lower total water demand for construction, operation, and decommissioning activities. Less site preparation would reduce the potential for changing drainage patterns which, if not controlled, could otherwise be a source of adverse effects to water quality. For example, under Alternative B no grading would be needed for the inverter/transformer pads; instead of stripping vegetation from the site, the vegetation at the inverter/transformer stations would be trimmed to 6 inches in height. This alternative would require an estimated 600 AF of water during construction which would be a substantial reduction from the of 1,000 AF estimated for Alternative A. The lower water demand would therefore have a reduced potential to adversely affect water supplies, compared to Alternative A.

### 3.18.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would disturb 300 acres less ground than Alternative A, resulting in less potential for erosion or for runoff from impervious surfaces. This would reduce the potential for changing drainage patterns that could be a source of adverse effects to water quality. Similar to Alternative A, regulatory requirements including preparation and implementation of the Storm Water Management Plan and the DESCP, as required by Mitigation Measure BIO-14, would still occur under this alternative. As a result of a smaller disturbance area, this alternative would have a lower construction water demand (estimated at 870 AF). The estimated water requirements during operation would be similar to Alternative A. Impacts on water supply would therefore be similar but slightly reduced compared to Alternative A.

### 3.18.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, there would be no ground disturbance, no construction, and no impact on local or off-site water supplies. If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. Therefore, no adverse effects would occur on water resources under this alternative.

## 3.18.5 CEQA Significance Thresholds and Determinations

Based on the CEQA Guidelines Appendix G, a project would have a significant impact on water resources if it would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   (i) result in substantial erosion or siltation on- or off-site.

   (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

   (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

   (iv) impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

### 3.18.5.1 Alternative A: Proposed Action

**Impact 3.18.5a: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (*Less than significant with mitigation*)**

#### Construction and Decommissioning

Actions that involve or are expected to involve discharge of waste may be subject to waste discharge requirements under the Porter-Cologne Act. Chapter 4, Article 4 of the Porter-Cologne Act (Water Code §§13260-13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable RWQCB. The Project does not propose discharging waste that could affect the quality of waster of the state. However, as the Project would include ground disturbing activities to an area greater than 1 acre, the Project proponent would be required to prepare and implement a Storm Water Management Plan as required by Mitigation Measure BIO-14. The Storm Water Management Plan would include BMPs to be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby drainages, and would be applicable to all aspects of the Project, including the solar fields and the gen tie line. The DESCP prepared for the Project includes the following BMPs to be implemented, as necessary, during construction:

- Implementing erosion controls including scheduling restrictions, preservation of existing vegetation, hydraulic mulch, soil binders, velocity dissipation devices, and soil preparation/roughening.
- Sediment controls including silt fencing on selected downstream perimeters of the grading areas during construction until site stabilization. A total of 40,500 linear feet is estimated for the project. Check dams may also be used to prevent runoff from leaving the site.
- Temporary sedimentation basins with rip rap lined outfalls or sediment traps with lined outfalls can be installed at locations of drainage paths that enter and exit the site.
- Temporary fiber rolls or gravel bag berms or temporary silt dike can be installed at low spots or for minor drainage paths that enter or exit the site.

- Tracking controls including stabilized construction entrance/exit, stabilized construction roadway, and street sweeping/vacuuming.
- Soil, wind, and water erosion controls including soil stabilizers, covering stockpiles, soil binders, wind erosion controls, and stockpile management measures.
- Non stormwater management measures such as water conservation, vehicle cleaning and fueling, and concrete curing/finishing.
- Managing waste, material use, hazardous waste management, controlling litter, and liquid waste management.

With implementation of these construction requirements in accordance with existing regulations, the potential impacts on water quality would be less than significant.

### Operation

The solar facilities would require the limited use of certain hazardous materials for routine daily operation and maintenance. These would include fuels, paints, coatings, lubricants, and transformer oil. They could significantly and adversely impact water quality if the materials were to become entrained in stormwater. However, implementing the required HMBP would minimize the potential for this impact to occur by specifying the safe handling of hazardous materials on-site and the cleanup of spills.

Water quality could also be degraded by pollutants washed from impervious surfaces. During dry periods, impervious surfaces (i.e., hardscape surfaces such as PV panel foundations, buildings, compacted and paved roads and foundations) can collect greases, oils, and other pollutants. During storm events, these pollutants can become entrained in surface waters, resulting in water quality degradation. However, the Project would include measures contained within the DESCP (e.g., permanent low water crossings, permanent stabilized construction roadways, use of soil binders, revegetation) to protect water quality with site-specific stormwater and sediment retention measures, and by designing the Project to minimize site disturbance. The hydrologic function of natural drainages would be maintained through avoidance or with design measures that control erosion. BMPs are intended to address those water quality impacts related to drainage that are inherent in development. Adherence to these measures would minimize the potential for water quality to be degraded by storm drainage during the operations phase of the Project. Cleaning the solar panels with water periodically is unlikely to result in off-site discharges. No other discharges are anticipated during operation of the Project. For these reasons, with the implementation of Mitigation Measure BIO-14, the Project would have a less-than-significant impact.

### Mitigation Measures

Implement Mitigation Measure BIO-14.

### Significance after Mitigation

This impact would be less than significant with incorporation of Mitigation Measure BIO-14.

**Impact 3.18.5b: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? (*Less than significant*)**

### Construction and Decommissioning

Project construction would require the use up to 1,000 AF of water for dust control and to condition soils for compaction as part of the grading activities. Water would be sourced from an on-site groundwater well, off-site wells, or trucked in from PVID. If sourced from the PVID, Project water consumption would not decrease groundwater supplies because PVID sources surface water from the Colorado River. Well water could be sourced from either the CVGB or PVMGB. According to the groundwater basin prioritization for identification of critically over drafted basins in accordance with the Sustainable Groundwater Management Act (SGMA), both the CVGB and PVMGB are rated as very low priority[2] (DWR 2019). Based on the total storage and recharge information described above in Section 3.18.4.1, the Project's water construction and decommissioning water consumption would be substantially less than annual recharge. Therefore, the Project would not lower total storage levels and would have a less-than-significant impact on groundwater supplies.

### Operation

During operation, the Project would require approximately 22 AFY of water for periodic module washing and maintenance, and for the substation's restroom facilities. Water supply for operation could be obtained from an on-site or off-site groundwater well, or trucked from PVID. Based on the total storage and estimated annual recharge to the CVGB and PVMGB, if groundwater is used, the operational annual demand would be 0.5 percent or less of annual recharge, depending on the basin. This would not deplete groundwater levels and would result in a less-than-significant impact.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. This impact would be less than significant.

**Impact 3.18.5c(i): Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? (*Less than significant with mitigation*)**

### Construction, Operation, and Decommissioning

As discussed above, the Project would include measures to ensure the proper protection of water quality through the implementation of BMPs during construction and decommissioning, site-specific stormwater and sediment retention features, and other design elements during operation that would minimize site disturbance. The hydrologic function of natural drainages would be maintained to the extent feasible through avoidance or design measures that control erosion (e.g., permanent low water crossings, permanent stabilized construction roadways, use of soil binders, revegetation). BMPs such as filtration, drainage swales, runoff-minimizing landscapes, energy dissipaters, and other measures outlined in the DESCP would be effective in reducing the potential for erosion or sedimentation. Adherence to these measures would minimize the potential for water quality degradation during the operations phase. Apart from cleaning the solar panels with water, which is unlikely to result in off-site discharges, no other discharges would occur during operation of the Project.

For these reasons, the Project would have a less than significant impact with implementation of Mitigation Measure BIO-14, which would require implementation of a Storm Water Management Plan, relating to changes in drainage patterns and any subsequent erosion or siltation on- or off-site.

### Mitigation Measures

Implement Mitigation Measure BIO-14.

### Significance after Mitigation

This impact would be less than significant with incorporation of Mitigation Measure BIO-14.

[2] Basin prioritization was developed by DWR in 2014 to focus and align limited resources towards groundwater basins that are most in need of establishing more sustainable groundwater resource management practices and considers overlying population, projected growth, reliance on groundwater, and current water balance conditions. Very low priority basins typically reflect basins that have few people, limited irrigation, and little to no groundwater use.

**Impact 3.18.5c(ii): Would the Project substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (*Less than significant*)**

### Construction, Operation, and Decommissioning

The changes in drainage patterns associated with the Project would occur primarily from the increase in impervious areas from the solar panel arrays, slabs, buildings, and paved or compacted access roads. The panel arrays would be spread out over a large area and, though technically considered an impermeable surface, the water running off individual panels would infiltrate the ground in the spaces around and between the panels. Hydrologic modeling for the site concluded that the Project is not expected to cause more than 1 foot of water surface rise, and that the discharges during a 100-year storm event would be similar to the existing flow patterns with low water depth and velocities (Westwood 2018, see Phase C Hydrology study provided in Appendix U.3). Therefore, this impact would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.18.5c(iii): Would the Project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (*Less than significant*)**

### Construction, Operation, and Decommissioning

Runoff currently occurs at the Project site as overland sheet flow. There is no drainage infrastructure on or near the Project site. The Project would include installation of some drainage features (e.g., permanent low water crossings, permanent stabilized construction roadways, use of soil binders, revegetation) to control peak runoff conditions, as discussed above; however, runoff would still occur as overland flow. According to the hydrologic modeling, the peak runoff from the site would not be substantially higher in depth and velocities than the current conditions. The Project would not exceed the capacity of existing or planned drainage systems, and the Project's contribution of additional sources of polluted runoff would not be substantial as demonstrated by the hydraulic modeling and incorporation of design features in the DESCP. Therefore, the potential impact related to this criterion would be less than significant.

### Mitigation Measures

None required.

### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.18.5c(iv): Would the Project impede or redirect flood flows? (*Less than significant*)**

### Construction, Operation, and Decommissioning

The Project site is not located within a 100-year flood hazard zone as identified by FEMA. The entire site is mapped as Zone D– Area of Undetermined Flood Hazard (Westwood 2018). The hydrologic analysis for the site after construction of the Project indicated that during a 100-year storm event, the flood waters across the majority of the site are estimated to be less than 0.5 feet, with relatively low velocities (Westwood 2018). The O&M Building, energy storage, operations and maintenance building, and switchyard all appear to be outside of the modeled 100-year flood depth areas and regardless, the proposed improvements that would be constructed as part of the Project would be elevated approximately 1 foot above the 100-year peak flood depth, therefore it is unlikely that stormwater flows would be impeded by these structures. This impact would be less than significant.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not Applicable. No mitigation is required.

**Impact 3.18.5d: Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation? (*No impact*)**

#### Construction, Operation, and Decommissioning

The Project site is not located within a 100-year flood hazard zone, as noted above. The Project site is also located well inland and is not near any enclosed or semi-enclosed body of water such that it could be susceptible to seiche or tsunami hazards. There would be no impact related to this criterion.

#### Mitigation Measures

None required.

#### Significance after Mitigation

Not applicable. No mitigation is required.

**Impact 3.18.5e: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (*Less than significant with mitigation*)**

#### Construction, Operation, and Decommissioning

The Project site is located within the Colorado River RWQCB region. The water quality control plan for this region, last amended in August 2017, includes water quality requirements to protect beneficial uses of receiving waters. The Project would implement stormwater drainage design requirements to ensure that adverse effects related to stormwater and water quality would be minimized, consistent with the region's water quality control plan and also required by Mitigation Measure BIO-14. As also noted above, the Project site is not located in a high-priority groundwater basin and as a result there is no requirement for a sustainable groundwater management plan. The Project would not conflict with a water quality control plan. There is no groundwater management plan adopted for either of the groundwater basins intersected by the Project. Therefore, the Project's potential impact, with implementation of Mitigation Measure BIO-14 would be less than significant.

#### Mitigation Measures

Implement Mitigation Measure BIO-14.

#### Significance after Mitigation

This impact would be less than significant with incorporation of Mitigation Measure BIO-14.

## 3.18.5.2 Alternative B: Alternative Design

### *Construction, Operation, and Decommissioning*

Compared to the Project, Alternative B would have a reduced scale of ground disturbance during construction, which would result in reduced impacts to water resources. For example, under Alternative B no grading would be needed for inverter/transformer pads; instead, vegetation would be trimmed to 6 inches in height and the soil beneath the inverter/transformer stations would remain pervious. Each inverter/transformer area would measure roughly 40 feet by 25 feet. The equipment would be mounted on steel skids and installed on steel piers above the ground surface in order to minimize surface disturbance and allow for natural stormwater flow through the site. Overall, under Alternative B the final drainage pattern changes at the facility would be relatively similar to

Alternative A. Therefore, the impacts of operation, maintenance, and decommissioning would be similar to those described for the Project. Impacts relating to water resources would be less than significant.

### 3.18.5.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Alternative C would have an overall reduced footprint at the site; therefore, the overall ground disturbance would be reduced under this alternative compared to the Project. The area of new impervious surfaces would be decreased compared to the Project because of the reduced acreage. As a result, Alternative C would have a reduced volume of runoff during peak storm events and a reduction in potential sources of polluted runoff. Water use would also be reduced during construction, operation, and maintenance. Implementation of a Storm Water Management Plan would still, however, be necessary to reduce potential water quality impacts. Therefore, water resource impacts under Alternative C would be less than significant with implementation of Mitigation Measure BIO-14.

### 3.18.5.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

The No Plan Amendment/No Action/No Project Alternative would result in no impacts concerning water resources, since there would be no ground disturbances and no changes to existing drainage patterns; nor would it introduce any sources of potential erosion or polluted runoff.

## 3.18.6 Cumulative Effects

### 3.18.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

The geographic and temporal scope for considering cumulative impacts to hydrology and water resources includes all the projects located within the Chuckwalla Valley and Palo Verde watershed units with the potential to be constructed within the same or a recent time frame as the Project. The cumulative projects described in Table 3.1-1 include 16 solar projects, 2 wind projects, 11 electrical facilities, and 14 other projects that are all within the Chuckwalla Valley and Palo Verde watershed units.

Related past, current, and reasonably foreseeable projects in the region are subject to the same federal, state, and local regulations as the Project pertaining to erosion control, grading, and drainage. The creation of new impervious surfaces on other project sites would be required to adhere to the same drainage control requirements as are applicable to the Project. These regulations are designed to be effective not only on a project scale but also in consideration of the larger watershed and groundwater basins such that they ensure that projects do not contribute to cumulative impacts related to erosion or offsite discharge of pollutants that could combine to cause a significant cumulative impact.

The cumulative projects could also place demands on the underlying groundwater basins for groundwater supply. As noted above, DWR has rated the CVGB and PVMGB as very low priority, as these basins are not identified as critically overdrafted (DWR 2019) and groundwater level data suggests that groundwater levels are relatively stable. Therefore, no existing significant impact has been identified with respect to these basins' groundwater levels. The solar projects listed in Table 3.3-1 would, like this Project, have their greatest rate of demand during the construction phase. It is unlikely that construction of all or many of the projects would occur simultaneously such that the existing recharge to the basins would be exceeded, causing depletion of total storage. Additionally, if construction of several projects did overlap, the sources of water are likely to vary between the CVGB and PVMGB, particularly if most projects would use on-site wells. This Project is the only project that straddles the two basins; five additional projects with foreseeable future construction activity are wholly within the CVGB (i.e., Desert Center 50, Arica, Jupiter, Desert Harvest, and Palen), and four are within the PVMGB (Blythe Mesa, Palo Verde Mesa, McCoy, and Desert Quartzite). In the CVGB, the maximum estimated cumulative construction consumption would be 3,000 acre-feet in a year, and in the PVMGB, the maximum estimated cumulative construction consumption would be 2,500 acre-feet in a year. However, it is extremely unlikely that all projects within one of these groundwater basins would be constructed at the same time. The distribution of these projects' construction water demands across the two basins and the temporal separation of construction phases across several years as projects complete preconstruction requirements at different times would lessen the simultaneous cumulative demand on any one basin such that existing annual recharge would not be exceeded. Given where each of these projects is in planning and permitting, a more likely scenario is that two projects may be under construction and drawing water from the same basin at the same time, resulting in a maximum cumulative construction consumption of 1,000 to 1,200 acre-feet in a year. Operational consumption, assuming all projects are eventually in operation at the same time, would be up to 168 acre-feet per year in the CVGB and up to 704 acre-feet per year in the PVMGB. None of these scenarios would exceed the annual recharge for either of these basins.

Nonetheless, like this Project, many of the cumulative projects may install or use existing wells on or near each project site, drawing directly from the CVGB or PVMGB. Therefore, although not very likely, it is possible that cumulative solar projects could overlap in construction and/or decommissioning in timing such that cumulatively they would withdraw groundwater in excess of natural recharge causing groundwater levels to decline. The Desert Quartzite project in particular would use onsite wells within the PVMGB, and given the location of that project immediately to the east of the Project site, the localized drawdown effects of project-related pumping could combine to cumulatively impact pumping rates in other nearby wells, a potentially significant cumulative impact to which the Project could have a cumulatively considerable contribution. Mitigation Measure WAT-1 would require the development and implementation of a Groundwater Monitoring, Reporting, and Mitigation Plan prior to the onset of construction of the Project that would result in implementation of measures to mitigate any adverse effects on nearby wells. This would reduce the Project's incremental contribution to a less-than-significant level because it would ensure that all Project-related impacts would be reversed through cessation of pumping or would be compensated for through improvement of pumping equipment for affected wells.

Additionally, although the BLM considers it unlikely that the Project would withdraw groundwater from below the Colorado River Accounting Surface, if that were to occur, this would mean that other projects such as Desert Quartzite, McCoy, Modified Blythe, Blythe Mesa, and Palo Verde Mesa projects in the PVMGB also might withdraw groundwater from below the Colorado River Accounting Surface. Mitigation Measure WAT-2 would require the implementation of a plan to account for any water that might come from the Colorado River and provide replacement on an acre-foot to acre-foot basis as would other cumulative projects located within the accounting surface area. However, as discussed above, the USGS has initiated a groundwater monitoring program because of the growing interest in solar developments within the CVGB. With implementation of Mitigation Measures WAT-1 and WAT-2, the Project's contribution to potential cumulative effects on groundwater levels or groundwater recharge would be mitigated to a less-than-significant level.

### 3.18.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The cumulative impacts for Alternative B would be similar to those of Alternative A because even with the reduced footprint and associated ground disturbance, changes to drainage patterns and groundwater use would be similar to Alternative A. For Alternative B, it is assumed that the water use for other projects would be the same during the construction, operation, and decommissioning as Alternative A. In addition, the construction and operational time frame would be the same under Alternative B as Alternative A; therefore, with implementation of Mitigation Measures WAT-1 and WAT-2, Alternative B's incremental contribution to potentially significant cumulative impacts would also be less than significant.

### 3.18.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

In the cumulative scenario, it is assumed that water use would be similar for other projects of comparable size during construction, operation, and decommissioning as Alternative A. In addition, although the construction period would be shorter under Alternative C, the operational time frame would be the same as Alternative A. Under Alternative C, the overall footprint and its associated area of disturbance would be reduced, resulting in a decreased alteration of drainage patterns, compared to Alternative A. Alternative C would also utilize a slightly lower volume of water for construction and operation, compared to the Project. However, implementation of Mitigation Measures WAT-1 and WAT-2 would also be warranted under Alternative C because despite the reduced water supply demand compared to Alternative A, Alternative C could still result in localized effects on nearby wells and/or consumption of water from beneath the Colorado River Accounting Surface. Therefore, with implementation of Mitigation Measures WAT-1 and WAT-2, Alternative C's incremental contribution to potentially significant cumulative impacts would be less than significant.

### 3.18.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under Alternative D, the BLM would not authorize the Project, and neither the Project nor any of the action alternatives would be implemented. The public lands in the Project area would continue to be managed by BLM in accordance with existing land use designations. Alternative D would not change drainage patterns compared to existing conditions and would not require the use of groundwater supplies. Therefore, Alternative D would not contribute to cumulative hydrological impacts.

## 3.18.7 Residual Effects

The implementation of existing regulatory requirements including the Porter-Cologne Act Report of Waste Discharge and other applicable regulatory requirements would provide construction standards and BMPs that are protective of water quality. Other drainage control features (e.g., permanent low water crossings, permanent stabilized construction roadways, use of soil binders, revegetation) would ensure that water quality and peak storm runoff volumes are controlled. Compliance with existing regulatory requirements and implementation of Mitigation Measure BIO-14, WAT-1, and WAT-2 would effectively offset direct, indirect, and cumulative impacts on water resources.

# 3.19 Wildland Fire Ecology

## 3.19.1 Introduction

This section presents the Project's regional and local environmental setting, analytical methodology, direct and indirect effects, CEQA significance thresholds and determinations, cumulative effects, and residual effects concerning wildland fire ecology. The regulations applicable to this analysis are summarized in Appendix E.

## 3.19.2 Regional and Local Environmental Setting

The Project site is at the northern foot of the Mule Mountains in eastern Riverside County. Compared to other parts of California, there are relatively few occurrences of wildland fires in the Project area and most are not substantial. The multi-agency statewide map of fire history compiled by CAL FIRE shows only two fires in the Project vicinity, both occurring the 1970s (CAL FIRE 2019a). The NECO Plan notes that between 1980 and 1995, a handful of fires burned a total of about 6,000 acres in the NECO Plan Area, but all were outside the Project site. Of this amount, about 900 acres in the Chemehuevi Critical Habitat Unit and about 11 acres in the Chuckwalla Critical Habitat Unit burned. Most fires in the desert are caused by lightning or vehicles (BLM 2001). No wildland fires larger than 100 acres have been burned in the last century within the study area (CAL FIRE 2019b).

As described in Section 3.3, Biological Resources, the sparse vegetation on the Project site is dominated by creosote scrub habitat and desert dunes. Tall trees do not exist on the Project site. The creosote scrub habitat occurs among a patchwork of dune sands and desert pavement interspersed throughout the Project site. The most common weedy plants on the site are Saharan mustard (*Brassica tournefortii*), Russian thistle (*Salsola* spp.), and Mediterranean grasses (*Schismus arabicus* and *S. barbatus*). Saharan mustard and Russian thistle are common in dunes in the northern section of the site, while each of the Mediterranean grasses are widespread throughout on-site shrub habitat. Each of these annual plant species can increase the frequency and extent of fire in Californian deserts, as dead plant matter increases standing fuel loads.

The California Department of Forestry and Fire Protection (CAL FIRE) maps Fire Hazard Severity Zones (FHSZs) pursuant to California Government Code Sections 51175-51189, based on the severity of fire hazard that is expected to prevail in those areas and on factors such as fuel, slope, and fire weather. While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern (CAL FIRE 2012a). Although FHSZs only have legal status within state responsibility areas (SRAs) under the jurisdiction of CAL FIRE, or within a local responsibility area (LRA) under the jurisdiction of a local agency if that agency has adopted the FHSZs, CAL FIRE does map recommended FHSZs within federal responsibility areas (FRAs) under the jurisdiction of a federal agency, such as the Project site. As shown in Figure 3.19-1, *Fire Hazard Zones in the Project Vicinity*, the Project is wholly within a moderate FHSZ (the lowest ranking) as recommended by CAL FIRE (2007).[1] Additionally, CAL FIRE has mapped both the fuel rank and fire threat in the Project area as moderate (CAL FIRE 2005a, 2005b). The BLM would be first responder for wildland fires and the Riverside County Fire Department (RCFD) would be the first responder for structure fires at or near the Project site.

Climate change would result in a small but general increase in temperature, and also could result in an increase in the frequency of extreme weather events that could increase wildfire hazard, such as increased frequency of drought and heat waves or wetter seasons that increase fuel loads, during operation, maintenance, and decommissioning of the Project (CAL FIRE 2012b).

1 Figure 3.19-1 displays a small portion of previously designated LRA, which has since been acquired by the BLM and is therefore now FRA, like the balance of the Project site.

## 3.19.3 Analytical Methodology

This analysis assesses the size, location, and environmental setting of the Project and alternatives; the potential for the Project to increase the risk of wildfires, and the primary causes of fire in the area, which are lightning and vehicles.

## 3.19.4 Direct and Indirect Effects

### 3.19.4.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

During construction, the use of heavy equipment, vehicles, spark-generating tools/equipment, and increased human presence can increase wildfire ignition potential. The ignition of fuels during construction could occur anywhere within the Project site or disturbance areas of access roads. The direct ecological impacts of wildfire would include injury or mortality of plants and wildlife and the loss of forage and cover. Indirect ecological impacts would include changes to the vegetation communities and the wildlife supported by these communities. The extent and severity of the direct and indirect impacts would increase proportionally with the size and intensity of the fire. The potential spread of invasive plants, especially annual grasses, would create an increased potential for wildfires, which can result in ecological change. Additionally, a fire originating on the Project site could spread off-site, increasing potential damage to off-site biological resources, and could impact air and water quality, or threaten other projects or structures (i.e., the Colorado River Substation and/or Chuckwalla Valley and Ironwood State Prisons) and pose a risk to life and property.

The occurrence of wildfires in the study area historically has been low (BLM 2001); however, repeated fires are known to decrease perennial plant cover and to aid some invasive annual plants, such as Saharan mustard and Russian thistle. If such invasive plants gain widespread propagation, they provide a source of fuel that can result in increased wildfire expansion, and in potentially larger, more widespread fires. Surface-disturbing activities and vehicle use could promote the introduction of invasive plants and increase this likelihood within and beyond the Project site. If the spread of invasive, non-native plants is not controlled during construction, over time the Project site could become dominated with non-native plants that tend to increase the frequency and severity of wildfires.

The Project would include proposed vegetation management methods (see Section 2.4.4) that entail vegetation trimming and removal by manual, non-mechanical means or via the use of approved herbicides on the Project site to minimize the potential for weed colonization. A Project Weed Management Plan (AECOM 2019; Appendix I.10 of this Final EIS and Proposed PA) would be implemented as part of the Project and is required in Mitigation Measure BIO-16 (Weed Management). The Plan includes a risk assessment of invasive weed species within the study area, procedures to control their spread on-site, and procedures to help minimize the introduction of new weed species. The Plan proposes prevention methods such as equipment washing and the use of the weed free products, as well as proposed manual, chemical, and, if needed, mechanical control of weeds. Mechanical control activities (i.e., chaining, grubbing, and disking) are not likely needed due to the low numbers of woody species that would require this type of weed control. Implementation of the Weed Management Plan would not completely eliminate the introduction of invasive plants to the study area, but would minimize their introduction and control their spread on the Project site.

To minimize the potential for wildfires caused by construction-related activity, the Project would implement Mitigation Measures BIO-15 (Wildfire Prevention) and FIRE-1 (Fire Safety Plan) during construction. These mitigation measures outline requirements for reducing potential Project-related ignitions, including parking and tool/equipment storage requirements, spark-generating equipment usage requirements, personnel training, communications and reporting requirements, identification of evacuation procedures, long-term project monitoring, and fire agency coordination, among others. The Fire Safety Plan would be submitted to BLM and RCFD prior to issuance of a Notice to Proceed with Project construction.

Construction activities in combination with the potential spread of invasive weeds would result in a moderate short- to long-term increase in risk of wildfire. Implementation of the Project's Weed Management Plan, as required by Mitigation Measure BIO-16, and of Mitigation Measures BIO-15 (Wildfire Prevention) and FIRE-1 (Fire Safety Plan), would reduce construction-related contributions to wildfire risk.

During operations, the number of workers, vehicles, and tools and equipment on the Project site would be substantially reduced compared to construction; however, their presence would contribute to a greater ignition potential than under existing conditions, and so there would still be some risk of wildfire during operations. Implementation of the fire prevention and suppression actions in the Fire Safety Plan, as required by Mitigation Measure FIRE-1, would minimize the potential for ignitions during operations and reduce wildfire risk by providing for fire reporting and agency response facilitation should a fire occur.

Additionally, operation of the electrical collection lines and gen-tie line could increase the risk of fire. If nearby conductors contact each other, such as during extremely high winds, this contact can result in arcing (sparks) that can ignite nearby vegetation. Additionally, lightning strikes on power lines could create voltage surges that might result in a fire by causing arcing to nearby trees (WAPA 2019). The vegetation currently present on the site is not particularly susceptible to wildfire, as demonstrated by the sparse history of fires in the Project area described in Section 3.19.1. However, if invasive plants are introduced to the Project site and surrounding area as a result of the Project, the dryer, more fire-prone weedy vegetation could combine with arcing risk to increase the potential for wildfire. Therefore, during operations, implementation of BIO-16 (Weed Management), and FIRE-1 (Fire Safety Plan), and adherence to building codes relevant to fire safety and other applicable laws and regulations, would reduce wildfire ignition potential and Project-related wildfire risk.

Impacts from decommissioning would be the same as those described for construction.

### 3.19.4.2 Alternative B: Alternative Design

Alternative B is defined by implementation of one or more Design Elements that differ from Alternative A (see Section 2.5). Alternative B would not result in changes to effects associated with linear features of the Project. Table 3.19-1 summarizes the change in Wildfire impacts under Alternative B, by Design Element.

**TABLE 3.19-1**
**CHANGE IN ADVERSE EFFECTS UNDER ALTERNATIVE B BY DESIGN ELEMENT RELATIVE TO EFFECTS UNDER ALTERNATIVE A**

| Resource/Environmental Factor | DE-1 | DE-2 | DE-3 |
|---|---|---|---|
| Wildfire Risk | Increase | Increase | No change |

NOTES:
DE-1: Minimizing grading during site preparation and maintaining more on-site vegetation to facilitate post-construction residual habitat value and post-operations/site reclamation success
DE-2: Avoiding or limiting trenching by placing electrical wiring aboveground
DE-3: Placing transformer/inverter groups on elevated support structures in lieu of cement foundations

#### *Construction, Operation, and Decommissioning*

The impacts of Alternative B on wildfire risk during construction and decommissioning would be similar to Alternative A. During operations, Alternative B would have a slightly increased risk of impacts from wildland fire compared with Alternative A because of the use of aboveground wiring (DE-2), which has a greater potential to ignite a wildfire than buried wiring. In addition, Alternative B would minimize vegetation removal beneath the solar panels (DE-1), which would also create a greater likelihood of wildfire ignition because the solar wiring would be installed along the underside of the solar panels and in close proximity to vegetation. Similar to Alternative A, Alternative B would implement Mitigation Measures BIO-15 (Wildfire Prevention), BIO-16 (Weed Management, see Appendix I.10), and FIRE-1 (Fire Safety Plan). Alternative B specifically would minimize or avoid vegetation removal and include wiring beneath solar panels. Therefore, the fire risks associated with Alternative B would greater than Alternative A.

### 3.19.4.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

Constructing and decommissioning under Alternative C would cause the same types of wildland fire impacts as Alternative A related to the presence of project personnel and the use of construction tools/equipment and vehicles. However, the chance for exotic annual weeds to establish and change the fire regime in the Project area would decrease due to the disturbance of fewer acres. Consequently, the fire-related impacts for construction, operation, and decommissioning associated with the construction of Alternative C would be reduced relative to Alternative A. Similar to Alternative A, Alternative C would implement Mitigation Measures BIO-15 (Wildfire Prevention), BIO-16 (Weed Management, see Appendix I.10), and FIRE-1 (Fire Safety Plan).

### 3.19.4.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

Under this no-development alternative, no changes would be implemented on the site and the existing environmental setting described in Section 3.19.2 would be maintained. The plant communities at the Project site would not be expected to change noticeably from the existing conditions; therefore, Alternative D would not result in any impacts to wildland fire ecology described for the Project or other action alternatives.

## 3.19.5 CEQA Significance Thresholds and Determinations

Pursuant to California Public Resources Code subdivision (f) of Section 21083.01, the Office of Planning and Research, in cooperation with CAL FIRE, shall develop amendments to the initial study checklist of the CEQA Guidelines for fire hazard related questions and impacts for projects located on designated State Responsibility Areas and/or on lands classified as Very High Fire Hazard Severity Zones, as defined in subdivision (i) of section 51177 of the Government Code. The Office of Planning and Research complied with this requirement in its 2017 proposed comprehensive update to the CEQA Guidelines, and the Natural Resources Agency adopted the update in November 2018. The Project is entirely located within a federal responsibility area and no SRAs are located nearby. Additionally, the Project site is located within a moderate FHSZ, not a Very High FHSZ. Therefore, the CEQA Guidelines Appendix G questions adopted in November 2018 related to wildland fire are not applicable to the Project or alternatives.

However, the CEQA Guidelines Appendix G, under IX. Hazards and Hazardous Materials, addresses wildland fire risk that would be applicable to the Project. A project would have a significant impact on risks associated with wildland fire if it would:

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Please refer to Section 3.8, Hazards and Hazardous Materials, for an analysis of this CEQA checklist question under Impact 3.8.5g.

## 3.19.6 Cumulative Effects

### 3.19.6.1 Alternative A: Proposed Action

#### *Construction, Operation, and Decommissioning*

Incremental impacts of the Project could contribute to a cumulative effect on wildland fire risk in combination with other past, present, or reasonably foreseeable future actions. For purposes of this analysis, the geographic scope of the cumulative effects analysis for wildfire risk consists of the greater Mule Mountains region in eastern Riverside County. Based on the natural conditions (i.e., sparse vegetation and few nearby structures) and existing fire response infrastructure (see Section 3.16.2, Utilities and Public Services Regional and Local Setting, for details), it can be reasonably assumed that a fire could be contained within this area. The RCFD determines station location and its resulting coverage primarily based on departmental policy for acceptable response times by land use category; however, response times are currently under review and are not yet adopted for the "outlying" land use category in which the Project would be located. Ecological impacts of wildfire from the Project could occur throughout all phases of the Project, which could take place over 40 or more years including the construction period, the 30-year service life, and the decommissioning period.

The existing conditions described in Section 3.19.2 reflect that none of the lands that are greater than 100 acres in the cumulative study area for wildland fire ecology have burned in the last century. The nearest wildfires to the Project site that were over 100 acres in size were the 546-acre Coarsegold fire in 1976, 5 miles south of the Project site; and the 1,452-acre Lightning #55 fire in 1973, 8 miles west of the Project site (CAL FIRE 2019b). Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Section 3.1.5. Projects that were identified within the cumulative study area for wildland fire ecology include the Blythe Airport Solar I Project 9 miles to the northeast, the Modified Blythe Solar Power Project 8 miles to the northeast, the Blythe Mesa Solar Project 9.5 miles to the northeast, the McCoy Solar Energy Project 10 miles to the northeast, and Desert Quartzite 0.5 miles to the northeast. For each of these projects, the installation and operation of solar facilities (including the transmission lines necessary to connect facilities to electrical substations) and the use of equipment (including motor vehicles) could spark or otherwise provide an additional ignition source within the study area, potentially combining to result in a significant cumulative increase in the likelihood of wildfires. Additionally, the increased human presence and disturbance caused by the construction, operation, and overall development that would occur under the cumulative scenario could advance the rate of invasion by non-native vegetation and thereby result in cumulatively significant increased fine fuel-loading that would ignite more readily and burn more quickly. Furthermore, if the spread of invasive, non-native plants is not controlled during construction, over time the Project site and surrounding areas could become dominated with non-native plants that tend to increase the frequency and severity of wildfires. Therefore, the Project could have a cumulatively considerable contribution to both increased ignition risk and fuel loading impacts during all Project phases.

Prior to construction, the Project would implement a Weed Management Plan, as required by Mitigation Measure BIO-16, which includes a risk assessment of invasive weed species within the study area, procedures to control their spread on-site, and procedures to help minimize the introduction of new weed species. Implementation of the Weed Management Plan would not completely eliminate the introduction of invasive plants to the study area, but would minimize their introduction and control their spread on the Project site, thus reducing the frequency and severity of wildfires. During construction and decommissioning, implementation of Mitigation Measures BIO-15 (Wildfire Prevention) and FIRE-1 (Fire Safety Plan) would reduce the Project's contribution to potentially significant cumulative impacts by: minimizing the potential for ignitions (i.e. vegetation clearing, vehicle parking, idling, and smoking restrictions, proper use of gas powered equipment, and hot work restrictions); include fire suppression equipment and requirements (i.e. spark arrestors, fire extinguishers); require fire training (i.e., prevention, evacuation, and procedure measures) (BIO-15 and FIRE-1). During operations, implementation of Mitigation Measures BIO-16 (Weed Management) and FIRE-1 (Fire Safety Plan) and adherence to building codes relevant to fire safety and other applicable laws and regulations, would reduce the Project's contribution to potentially significant cumulative impacts by requiring non-native plant removal and prevention, vehicle cleanings, and weed control (BIO-16). In addition to minimizing the potential for ignitions as described above, Mitigation Measures BIO-15 and FIRE-1 would also require compliance with applicable wildland fire management plans and policies established by state and local agency and required the Applicant to notify the BLM and RCFD in the event of a fire safety emergency.

With implementation of the mitigation measures discussed above, the Project's contribution to significant cumulative impacts would not be cumulatively considerable.

### 3.19.6.2 Alternative B: Alternative Design

#### *Construction, Operation, and Decommissioning*

The incremental impacts of Alternative B are slightly increased when compared to Alternative A due to increased ignition sources that would result from the installation of aboveground wiring and the minimization or avoidance of vegetation removal beneath the solar panels. While the risk for on-site fires is greater under Alternative B, the likelihood of causing a wildfire at in the Project area would remain moderate as determined for Alternative A when incorporating Mitigation Measures BIO-15, BIO-16, and FIRE-1. Therefore, cumulative impacts are not expected to differ substantially from Alternative A.

### 3.19.6.3 Alternative C: Reduced Acreage Alternative

#### *Construction, Operation, and Decommissioning*

The incremental impacts of Alternative C are not expected to differ substantially from Alternative A, because similar types of construction, operation and maintenance, and closure and decommissioning activities would occur. The reduction in acreage developed under Alternative C would not change the cumulative effect on wildfire risk resulting from the cumulative scenario projects.

### 3.19.6.4 Alternative D: No Plan Amendment/No Action/No Project Alternative

If Alternative D were to be implemented, no changes would occur, and the existing environmental setting would be maintained. Alternative D would have no contribution to a cumulative impact.

## 3.19.7 Residual Effects

Even with the fire and weed control programs that would be incorporated into the Project, the changes in vegetation and in vehicle use accessing the area for construction, operation, maintenance, and decommissioning would increase the likelihood of wildfires in the Project area to a slight but unknown degree.

# 3.20 Other CEQA and NEPA Considerations

## 3.20.1 Mandatory Findings of Significance

This section is intentionally left blank. CDFW continues to address issues related to cultural resources and tribal cultural resources under CEQA and will finalize these analyses and make any applicable mandatory findings of significance under separate cover in a Final EIR.

## 3.20.2 Significant Unavoidable Environmental Impacts

This section is intentionally left blank. CDFW will finalize its CEQA analyses and summarize any significant unavoidable environmental impacts, if any would result from the Project or an alternative, under separate cover in a Final EIR.

## 3.20.3 Significant Irreversible Changes

This section is intentionally left blank. CDFW will finalize its CEQA analyses and summarize any significant irreversible changes, if any would result from the Project or an alternative, under separate cover in a Final EIR.

## 3.20.4 Short-Term Uses and Long-Term Productivity (Other NEPA Considerations)

The Bureau of Land Management's National Environmental Policy Act (NEPA) Handbook (H-1790-1 Section 9.2.9) and the NEPA Guidelines (40 CFR 1502.16) require a discussion of the relationship between short-term uses of the environment resulting from the Project or alternatives and the maintenance and enhancement of long-term productivity of the environment. The environmental impacts described for the Project or alternatives in Chapter 3, Environmental Analysis, include short-term uses of the land area and resources during construction and throughout the 30-year life of the Project, and permanent, adverse impacts that would affect long-term productivity of the Project area following Project decommissioning. Temporary adverse impacts to resources such as air quality would cease following construction, and would not impact the long-term productivity of the environment. Other short-term uses, such as the loss of sensitive desert habitats, could adversely affect the long-term productivity of the area, even following decommissioning. Mitigation measures are proposed to avoid, minimize, or mitigate activities that impact long-term productivity (see Appendix B). The Project and other action alternatives would also provide an environmental benefit by generating electric power with a minimal increase in the use of non-renewable resources such as fossil fuels. Such a benefit could influence the long-term productivity of the environment.

# CHAPTER 4
# Consultation, Coordination, and Public Involvement

## 4.1 Interrelationships

The BLM's decision-making authority for the Project derives from the Federal Land Policy Management Act (FLPMA) (43 USC Section 1701 et. seq.). The FLPMA authorizes the BLM to issue ROW grants for systems of electrical generation, transmission, and distribution. In processing a land use plan amendment, BLM also must comply with its Planning Regulations (43 CFR Part 1600) and the BLM Land Use Planning Handbook (H-1601-1; March 2005).

### 4.1.1 Department of Defense

BLM coordinates with Department of Defense prior to approval of rights-of-way (ROWs) for renewable energy, utility, and communication facilities to ensure that these facilities would not interfere with military training routes and operations. The Department of Defense reviewed Project development documents provided by the Applicant and expressed an interest in ensuring that the Project would not interfere with a Marine Corps training facility, the Chocolate Mountains Aerial Gunnery Range. A Marine Corps representative contacted the BLM by phone to discuss the Project and its interconnection to the SCE transmission line (BLM 2018).

### 4.1.2 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) has jurisdiction to protect the aquatic ecosystem, including water quality and wetland resources under Section 404 of the federal Clean Water Act. Under that authority, USACE regulates the discharge of dredged or fill material into waters of the United States, including wetlands, by reviewing proposed projects to determine whether they may impact such resources and, thereby, are subject to the Section 404 permit requirement. USACE issued a Jurisdictional Determination on October 29, 2018, stating that waters of the United States do not occur on the Project site (USACE 2018).

### 4.1.3 U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) is a Cooperating Agency[1] under NEPA for the Project (USEPA 2018). USEPA is charged under Section 309 of the Clean Air Act to review the Environmental Impact Statements (EISs) of other federal agencies and to comment on the adequacy and the acceptability of the environmental impacts of the Project. USEPA also serves as the repository (EIS database) for EISs prepared by federal agencies and provides notice of its availability in the Federal Register.

### 4.1.4 National Park Service

The National Park Service (NPS) is an agency of the United States Federal Government that manages all national parks, many national monuments, and other conservation and historical properties with various title designations. NPS participated in pre-application meetings and monthly coordination calls for the proposed Project. NPS also participated in the development of the DRECP and now takes a landscape approach to

[1] Upon request of the Lead Agency, any other federal agency which has jurisdiction by law shall be a cooperating agency. In addition, any other federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon request of the Lead Agency. An agency may request the Lead Agency to designate it a cooperating agency (40 CFR Section 1501.6).

planning. The Project is a part of the DRECP landscape. Joshua Tree National Park (Joshua Tree) received an International Dark Skies designation. Therefore, NPS is concerned about project light management that could affect Joshua Tree. NPS is also concerned about fugitive dust, water supply, and impacts on cultural and historic resources.

### 4.1.5 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), as Lead Agency under CEQA, is central to the consultation and public review process. CDFW also has regulatory authority to protect resources. Under Fish and Game Code Section 1602, CDFW regulates modifications to streambeds as a means to protect fish and aquatic habitats within California. The Applicant is consulting with the CDFW to assess whether a Lake and Streambed Alteration Agreement (LSAA) would be needed for the Project's potential impacts to state jurisdictional waters. Compliance with the requirements of the LSAA would be required to implement the Project. Additionally, CDFW has the authority to regulate potential impacts to species protected under the California Endangered Species Act (CESA), per Fish and Game Code Section 2050 et seq. If warranted, the Applicant would be required to file an Incidental Take Permit (ITP) application. Compliance with the requirements of an ITP issued under CESA would be required to implement the Project.

## 4.2 Consultation Processes for Federal Endangered Species Act Section 7, NHPA Section 106, and Indian Tribes

### 4.2.1 Endangered Species Act Section 7

The U.S. Fish and Wildlife Service (USFWS) is also a Cooperating Agency under NEPA for the Project (USFWS 2017). The USFWS has jurisdiction over threatened and endangered species listed under the federal Endangered Species Act (FESA) (16 USC Section 1531 et seq.). Formal consultation with the USFWS under FESA Section 7 is required for any federal action that may adversely affect a federally listed species. The BLM initiated consultation through the preparation and submittal of a Biological Assessment (BA) that described the Project to the USFWS. Following review of the BA, the USFWS issued a Biological Opinion (BO) that specifies conservation measures that must be implemented for protection of the desert tortoise. Compliance with those measures would be required to implement the Project. The Biological Opinion is included as Appendix I.13.

### 4.2.2 NHPA Section 106 Compliance and Tribal Consultation

Section 106 of the NHPA, as amended, requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The BLM, as lead federal agency for the proposed Project, has a statutory responsibility to comply with Section 106 and is doing this through the Section 106 implementing regulations (36 CFR Part 800).

The BLM also has responsibilities to carry out government-to-government consultation with Indian tribes for the proposed Project in accordance with the Section 106 regulations and other applicable legal authorities such as the National Environmental Policy Act (NEPA), American Indian Religious Freedom Act (AIRFA), Executive Order 13007, Executive Order 13175, and BLM policy (BLM Manual 1780 Tribal Relations and BLM Handbook 1780-1 Improving and Sustaining BLM-Tribal Relations).

#### 4.2.2.1 NHPA §106 Compliance

On February 19, 2016, the BLM notified tribal consulting parties regarding the proposed Project and invited them to participate in a pre-application meeting and a site visit. The notification letter also invited tribal representatives to participate in formal government-to-government consultation. The BLM identified the following tribes as consulting parties in the Section 106 process:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Indians
- Cabazon Band of Mission Indians
- Cahuilla Band of Mission Indians
- Chemehuevi Indian Tribe
- Cocopah Indian Tribe
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Fort Yuma Quechan Tribe
- Morongo Band of Mission Indians
- Ramona Band of Cahuilla Indians
- San Manual Band of Mission Indians
- Soboba Band of Luiseno Indians
- Torres-Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians

On February 19, 2016, the BLM notified and invited the participation of other agencies and organizations including the USEPA, NPS, Riverside County, and the General Patton Memorial Museum.

On February 22, 2016, the BLM sent the California State Historic Preservation Officer (SHPO) a letter to initiate formal consultation under Section 106 of the NHPA and also sent a letter to the ACHP inviting their early participation in the consultation process. In a letter to the BLM dated March 9, 2016, the ACHP declined participation, but requested further notification should an adverse effect be identified.

In a letter dated July 28, 2016, the BLM presented the Area of Potential Effects (APE) and scope of historic properties identification efforts for the proposed Project to the SHPO, pursuant to the Section 106 regulations at 36 CFR 800.4(a). Tribal consulting parties were concurrently notified. The BLM later, in October 2016, provided a review of existing information on known and potential historic properties within the APE and sought information from consulting parties regarding historic properties in the area. The BLM provided all consulting parties with its work plan for identification and evaluation efforts for the proposed Project. The BLM addressed all comments received from consulting parties on the work plan and finalized it in June 2017.

By letter of September 14, 2016, the SHPO commented that the BLM's APE delineation and proposed scope of identification efforts for the undertaking were sufficient and appropriate. At that time, the BLM defined the APE for direct effects to include the entire solar facility footprint, staging areas, access roads, and a 3,980-foot-long generation tie-in transmission line (gen-tie), for a total area of 3,256 acres. BLM defined the APE for indirect effects to extend as much as 5 miles to the west, north, and northeast from the Project footprint with mountainous terrain limiting the extent to the south.

By letter of February 6, 2017, the BLM provided updates to the SHPO regarding its historic property identification efforts. In that letter the BLM told the SHPO that the results of the records search indicated a number of resources are present or possibly present within the APE. Also, the BLM proposed to revise the APE to consider direct effects to a reduced 2,881-acre area including the reduced solar facility footprint, staging areas, access roads, and a 3,980-foot-long gen tie. The APE to consider indirect effects remained unchanged.

By letter of July 19, 2017, the SHPO commented that the updated identification efforts were sufficient. However, the SHPO objected to the BLM's proposed revision of the direct APE. The SHPO recommended expanding the direct APE to include the entirety of the areas immediately adjacent to the south and south-west border of the project area rather than the fragmentary and disjointed area proposed. The SHPO recommended intensive Class III surveys be completed in these areas despite there being no proposed ground-disturbing activities.

On November 22, 2019, the BLM provided a letter to the SHPO (with concurrent notification to all consulting parties), transmitting the revised the direct APE to include areas recommended in the SHPO's July 19, 2017 letter. Subsequently, the BLM completed Class III survey of these areas. Additionally, in 2018 the Applicant redesigned the proposed alignment of the gen-tie where it would connect to the Colorado River Substation. A portion of the new alignment had not been included in the original APE or surveyed previously. This 15-acre portion of the new alignment was surveyed at the BLM Class III level and was included in the direct APE (for a total direct APE size of approximately 3,498 acres).

The BLM's historic properties identification efforts (summarized in Section 3.5.2.4) included a BLM Class I inventory (literature review and records search); a BLM Class III intensive pedestrian survey of the entire direct APE; an ethnographic and ethnohistoric literature overview; an evaluation of nine archaeological sites within the direct APE through subsurface archaeological testing; a geoarchaeological assessment of the direct APE; an assessment of potential indirect effects to known historic properties within the indirect effects APE; and ongoing tribal consultation.

The results of the BLM's identification efforts are summarized in Section 3.5.2.4 including Table 3.5-1. In a letter dated November 22, 2019, the BLM submitted its proposed determinations of National Register of Historic Places (National Register) eligibility and findings of effect to the SHPO, with concurrent notification to the tribal consulting parties, pursuant to the Section 106 regulations. The BLM found that Alternative C would not adversely affect historic properties, pursuant to 36 CFR 800.5(b). The BLM also found that Alternatives A and B would result in a direct adverse effect to historic properties including CA-RIV-1819/H and 16 sites that remain unevaluated but are being treated as eligible under Criterion D and avoided under Alternative C. Should the BLM select Alternative A or B, further investigations would be conducted to evaluate the 16 sites for their National Register eligibility. The BLM would then consult to resolve the adverse effect and complete the Section 106 process through development of a Memorandum of Agreement (MOA) prior to the Record of Decision (ROD) for the proposed Project. The BLM held a meeting for the consulting parties on December 4, 2019 in Blythe, CA (including a field visit to the Project area) to further explain the determinations and findings and address any questions.

In a letter dated February 6, 2020, the BLM re-notified all consulting parties regarding the BLM's National Register determinations and findings of effect for the proposed Project. This was necessary because the BLM was unable to verify that five of the tribal consulting parties received the notification letter of November 22, 2019. In re-notifying the tribes, the BLM provided an additional 30 days (March 6, 2020) for tribal consulting parties to submit comments. The SHPO was informed of the additional 30 days by letter dated February 11, 2020. The BLM extended this date another eight days (March 13, 2020) with notice to the tribes and the SHPO.

During the comment period, the BLM received written comments from five tribes, including the Agua Caliente Band of Cahuilla Indians, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and Fort Yuma Quechan Tribe. The BLM has also held face-to-face meetings with the Agua Caliente Band of Cahuilla Indians, Fort Yuma Quechan Tribe, and Soboba Band of Luiseno Indians. A meeting with Fort Mojave Indian Tribe was requested by the BLM and was delayed until September 2020 due to the COVID-19 pandemic. The meeting was held via teleconference. Tribal comments are discussed below under Section 4.2.2.2.

Taking these comments into account, and in response to minor changes to the design of the proposed Project made by the Applicant in February 2020, the BLM updated its determinations of National Register eligibility and findings of effect pursuant to the Section 106 regulations. The updated determinations and findings were submitted to the SHPO by letter dated July 22, 2020, with concurrent notification to tribal consulting parties. The tribes were provided 45 days to comment. The BLM identified additional historic properties within the indirect effects APE, but after further review found that there would be no adverse effect to these resources. Therefore, the BLM maintained its finding of no adverse effect for Alternative C as originally presented to consulting parties in November 2019, pursuant to 36 CFR 800.5(b). No written comments were received from the tribal consulting parties.

The SHPO responded by letter dated October 27, 2020 concurring with all of the BLM's determinations of National Register eligibility, but objecting to the BLM's finding of no adverse effect for Alternative C. The SHPO recommended that the BLM "utilize an Ethnographer or Cultural Anthropologist that meets the Professional Qualifications to conduct additional studies and seek additional information from consulting parties. . ." The SHPO and her staff met with BLM staff via teleconference on November 16, 2020 to discuss her comments. The BLM sent a letter dated December 7, 2020 to the SHPO attempting to resolve the objection by showing that the BLM's findings of effects are based on efforts that meet the reasonable and good faith standard under the Section 106 regulations (36 CFR 800.4(b)(1)) and are in accordance with ACHP guidance. In its response, the BLM described a number of previous ethnographic and ethnohistoric studies that were used to support its identification efforts and findings of effect. Many of these studies involved tribal interviews and consultations for nearby major projects and BLM land-use plans since the late 1970s that focused on lands now encompassed, or partially encompassed, by the APE for the Crimson Solar Project. The SHPO responded by letter of January 6, 2021 “not objecting” to the BLM’s finding of no adverse effect for the Preferred Alternative.

#### 4.2.2.2 Tribal Consultation

The BLM formally notified and invited 15 Indian tribes (see list in Section 4.2.2.1) to participate in government-to-government consultation by letter dated February 19, 2016, at the earliest stages of planning for the proposed Project. San Manuel Band of Mission Indians notified the BLM that they did not wish to participate in consultation for the proposed Project.

The BLM further notified tribes and invited them to engage in government-to-government consultation regarding the proposed Project by letter in July 2016 (regarding the proposed APE and scope of identification efforts); October 2016 (transmittal of the draft cultural resources work plan, research design, and Class I inventory); July 2018 (regarding notice to issue an Archaeological Resources Protection Act permit for site evaluations involving subsurface testing); August 2018 (regarding further notice to issue an ARPA permit); July 2019 (regarding further notice to issue an ARPA permit); early November 2019 (regarding notice of release of the Draft EIS); late November 2019 (regarding the proposed APE and proposed determinations of National Register eligibility and findings of effect); February 2020 (regarding re-notice of proposed determinations and findings); and July 2020 (regarding updated proposed determinations and findings as well as response to tribes’ earlier written comments if any were provided).

After the BLM presented its proposed Section 106 determinations and findings for the proposed Project in late November 2019, the BLM held an informational meeting for consulting parties in Blythe, CA on December 4, 2019. The meeting also included a field visit to the proposed Project area, also on December 4, 2019. The goals of both the meeting and field visit were to explain the BLM’s proposed determinations and findings and to address questions. Following the November 2019 letters and December 4, 2019 meeting, the BLM received written comments from five tribes, including the Agua Caliente Band of Cahuilla Indians, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and Fort Yuma Quechan Tribe. The BLM held face-to-face meetings with the Agua Caliente Band of Cahuilla Indians, Fort Yuma Quechan Tribe, and Soboba Band of Luiseno Indians. A meeting with Fort Mojave Indian Tribe was requested by the BLM and was delayed until September 2020 due to the COVID-19 pandemic. The meeting was held via teleconference.

After the BLM sent its updated proposed determinations of National Register eligibility and findings of effect to tribal consulting parties in July 2020 (as well as a response to each tribe’s earlier written comments, if any were provided), BLM professional staff followed up with telephone call(s) to each tribe in late August 2020 to verify receipt of the letter by the appropriate tribal staff and to answer any questions. The BLM did not receive any written comments from tribal consulting parties regarding its July 2020 letter.

Major comments from the tribes raised issues related to data sharing, artifact treatment, and cultural landscapes. Some of the tribes indicated that they could not fully comment until they had additional information, including in some cases confidential cultural resources data, regarding the proposed Project. Some of the tribes have also commented that they would like to see prehistoric artifacts subject to grading and other disturbance during Project construction relocated to other nearby BLM-administered lands for long-term protection. The BLM provided tribes with non-confidential versions of cultural resource study reports for the proposed Project. The BLM requested that the tribes enter into a formal data sharing agreement for the proposed Project prior to the BLM releasing the confidential data. Data sharing agreements have so far been executed with three tribes. The BLM has taken tribal concerns about prehistoric artifact treatment into consideration and has notified the tribes it will require an archaeological monitoring and discovery plan, should the proposed Project be approved and move to the construction phase. The BLM will develop this plan in consultation with all parties including the tribes.

Generally, the tribes have commented that the proposed Project area and surroundings are part of a much larger landscape of great importance to tribal culture and identity. Also, the tribes have questioned the consistency of the BLM’s National Register eligibility determinations for prehistoric resources within the direct APE. They expressed concern that some prehistoric resources are proposed as eligible while others proposed as not eligible seemingly have the same or similar types of artifacts. The BLM respectfully stands by its identification of cultural resources within the APE and its National Register eligibility determinations.

One tribe commented that the Mule Mountains are important to their religious beliefs and practices, and that the proposed Project, if constructed, would interfere with these beliefs and practices. The BLM had a consultation meeting with the tribe to discuss their comments. During the meeting, the tribe told the BLM that while they are not against renewable energy, they are opposed to the location of the proposed Project (and other solar projects on BLM-administered lands in the Chuckwalla Valley/Palo Verde Mesa area) because they believe that the entirety of undeveloped desert lands within their ancestral territory, including the cultural and natural resources found here, are of great importance to tribal culture and identity.

The BLM acknowledges the importance of BLM-administered lands within the APE (and larger landscape of the lower Colorado River) to the tribes' history and contemporary culture and identity. The BLM did not receive information from the tribes that changed its assessment of Project effects to identified historic properties within the APE, or that led to the identification of previously unknown historic properties in this area, pursuant to the Section 106 regulations. The BLM continues to consult with the tribes to understand the impacts of the proposed Project under NEPA and potentially other authorities such as the American Indian Religious Freedom Act (AIRFA) and Executive Order 13007. The BLM has told the tribes that the current public (including tribal) access to BLM-administered lands in the Mule Mountains would not be affected by the proposed Project. Further, there would be no direct construction-related impacts within the Mule Mountains Area of Critical Environmental Concern (ACEC) which the BLM designated, in part, to highlight and protect Native American values. The BLM's responses to these comments can be found in Appendix W as well as in government-to-government response letters to the tribes.

# 4.3 Consultation Process for Assembly Bill 52

CDFW continues to consult with tribes under AB 52 and will finalize the description of this consultation process under separate cover in a Final EIR.

On August 25, 2017, CDFW provided notification of the Project under CEQA section 21080.3.1 and CDFW's Tribal Communication and Consultation Policy to the 22 tribes identified by the Native American Heritage Commission (NAHC). The notification letters included a description of the Project and potential impacts to tribal interests, and invited consultation pursuant to CEQA and CDFW's Tribal Communication and Consultation Policy. Two tribes responded: The Colorado River Indians Tribes (CRIT) and Twenty-Nine Palms Band of Mission Indians.

The CRIT requested formal consultation in a letter dated September 25, 2017. In addition, CRIT outlined their government-to-government consultation process and indicated they needed additional project information to provide informed input into the process. CDFW's Tribal Liaison attempted to arrange an informal conference call for October 4, 2017, by email on September 27, 2017, and offered to help facilitate a formal government-to-government in-person meeting in compliance with CRIT's consultation policy. CDFW received a letter from the CRIT on April 16, 2018, through another state agency, that reiterated their consultation policy. On April 25, 2018, CDFW sent a follow-up letter via certified mail (delivered on April 26, 2019) that outlined CDFW's attempts to conduct consultation with CRIT and willingness to conduct a government-to-government consultation meeting with CRIT regarding the Project. After receiving no response, CDFW sent an email to the CRIT (Mr. Etsitty and Ms. Loudbear) on June 21, 2018, as a follow-up from the April 25, 2018 letter, reiterating their availability to conduct government-to-government consultation. Following the BLM's decision to conduct testing in July 2019, CDFW sent a letter via overnight delivery (delivered on August 2, 2019), and via email on August 1, 2019 to the CRIT reaching out to request if the CRIT would like to have a government-to-government consultation meeting regarding the Project. As of the time of publication of this Final EIS and Proposed PA, CDFW has not received a response to the April 25, 2018, letter; the June 21, 2018, email; or the August 1, 2019, letter and email.

The Twenty-Nine Palms Band of Mission Indians sent a letter dated September 21, 2017, indicating that they have been in correspondence with the BLM regarding the Project and that they would like approved Native American Monitor(s) from the Twenty-Nine Palms Band of Mission Indians to be included in designating tribal monitors. They also requested to review the Class III Cultural Report when completed. On September 27, 2017, CDFW's Tribal Liaison sent an email to Ms. Bliss from the Tribe informing them of their willingness to schedule a formal government-to-government consultation meeting. Following the BLM's decision to conduct testing in July 2019, CDFW sent a letter via overnight delivery (delivered on August 2, 2019), and via email on August 1, 2019 to the Twenty-Nine Palms Band of Mission Indians reaching out to request if Twenty-Nine Palms Band of Mission Indians would like to have a government-to-government consultation meeting regarding the Project. As of the time of publication of this Final EIS and Proposed PA, CDFW has not received a response to the September 27, 2017, email or the August 1, 2019, letter and email.

In addition to consultation through the Assembly Bill 52 process, on April 12, 2018, at the public scoping meeting in Blythe, California, Linda Otero from the Fort Mojave Indian Tribe had a one-on-one conversation with the CDFW representative in attendance. At this meeting, Ms. Otero made CDFW aware that the tribe had concerns regarding the Project and requested an opportunity to discuss their concerns with CDFW. On April 13, 2018, CDFW sent Ms. Otero a copy of the Project's Notice of Preparation via email and asked Ms. Otero to share the tribe's concerns with CDFW. Ms. Otero responded on April 18, 2018, thanking CDFW and indicating she was eager to meet in the future. On April 18, 2018, CDFW emailed Ms. Otero requesting that the tribe send a formal letter to CDFW indicating its interest in government-to-government consultation. CDFW also requested that Ms. Otero indicate her role in the consultation process in the letter. As of the time of publication of this Final EIS and Proposed PA, CDFW has not received a response to the April 18, 2018, email.

Pursuant to requests from the CRIT and Twenty-Nine Palms Band of Mission Indians, on May 23, 2019, CDFW confirmed with the CRIT that BLM provided them with copies of the cultural resources report and addenda on March 13, 2019. Also on May 23, 2019, CDFW confirmed with Twenty-Nine Palms Band of Mission Indians that BLM provided the report and addenda on March 12, 2019.

CDFW sent follow-up emails to the CRIT and Twenty-Nine Palms Band of Mission Indians requesting if the tribes would like to consult via phone or meet in-person for further government-to-government consultation following receipt of the cultural resources report and addendums. Consultation with the tribes is ongoing.

## 4.4 Implementation, Monitoring, and Enforcement

### 4.4.1 Implementation

The Lead Agencies will continue to involve and collaborate with the public during the implementation of the Project or an alternative, if 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 Project are invited to become actively involved in implementation, monitoring, and enforcement of decisions. The Lead Agencies 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 Project to ensure that decisions are implemented in accordance with the approved ROD and ROW grant, including the approved POD. 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 containing impacts of decisions and effectiveness of mitigation. Effectiveness monitoring would serve to advance 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 mitigation measures recommended for the Project. Adaptive management is based on clearly identified outcomes and monitoring to determine if management actions are meeting identified outcomes. If outcomes are not being met, adaptive management facilitates management changes to ensure that outcomes are met or to re-evaluate the outcomes. 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 Scoping

In compliance with NEPA (40 CFR 1501.7), USEPA published a Notice of Intent (NOI) in the Federal Register (Volume 83, No. 47) on March 9, 2018, providing notice of the BLM's intent to prepare an EIS for the Project (77 FR 64824). The NOI initiated the public scoping period for the EIS, provided information about the Project, and served as an invitation to provide comments on the scope and content of the EIS.

As required by Section 15082 of the CEQA Guidelines (14 CCR 15000 et seq.), CDFW issued an NOP on March 8, 2018, that summarized the Project, stated CDFW's intention to prepare a joint EIS/EIR, and requested comments from interested parties. The NOP is included as Appendix D. Twenty public notices were sent to property owners; 15 copies of the NOP were sent to the California State Clearinghouse; 46 public notices were sent to federal, state, and local agencies and organizations; and public notices were sent to 5 local libraries. Public notices also were sent to 30 Native American tribal groups.

During the NOI/NOP comment period, the BLM and CDFW held a total of three public scoping meetings. The first scoping meeting took place from 5 p.m. to 8 p.m. on April 3, 2018, in Palm Springs at the BLM's South Coast Field Office (1201 Bird Center Drive). The second meeting took place on April 11, 2018, from 5 p.m. to 8 p.m., at the University of California Riverside campus in Palm Desert, California (75080 Frank Sinatra Dr. B117, Palm Desert, CA 92211). The final public scoping meeting took place on April 12, 2018, at the City of Blythe's City Hall Multipurpose Room from 12 p.m. to 3 p.m. (235 North Broadway, Blythe, CA 92225).

Newspaper notices were published in the Palo Verde Valley Times, and the Desert Sun announcing the public scoping meetings. The BLM also issued a press release regarding the NOI on March 9, 2018. The NOI and press release were made available to agencies and the public on BLM's eplanning website: https://eplanning.blm.gov.

The comment period ended on April 27, 2018, for purposes of NEPA and on April 23, 2018, for purposes of CEQA. In total, 31 letters were received: 8 from federal, state, and local agencies; 5 from tribes; and 18 from individuals and organizations. The Final Scoping Report describes the comments received and is included as Appendix D.

## 4.6 Public Comment Process

The Draft EIS/EIR/PA was circulated for a 90-day public comment period beginning on November 1, 2019. The BLM and CDFW sent notices of availability and/or electronic copies of the document to cooperating and responsible agencies, nearby landowners, and other interested parties.

Two public meetings were held during the public comment period during the first week of December 2019; one took place in Palm Desert and the second took place in Blythe.

The BLM and CDFW received 21 comment letters during the public comment period. Copies of these are provided in Appendix V, and responses to comments are provided in Appendix W.

## 4.7 Administrative Remedies

BLM and USEPA's Office of Federal Activities will publish separate Notices of Availability (NOAs) for the Final EIS and Proposed PA in the Federal Register. The NOA to be published by the USEPA in the Federal Register will initiate a 30-day protest period on the Proposed Plan Amendment to the Director of the BLM in accordance with 43 CFR Section 1610.5-2. Following resolution of any protests, BLM will publish a Record of Decision which may be accompanied by an Approved Plan Amendment.

CDFW, as Lead Agency under CEQA, will later issue a Final EIR which it will use, in conjunction with other information developed in the CDFW's formal record, to act on approval of a Lake and Streambed Alteration Agreement and issuance of an Incidental Take Permit. Under CEQA requirements, CDFW will determine the adequacy of the Final EIR and, if adequate, will certify the document as complying with CEQA. After certification of the Final EIR, the CDFW will make a final decision on the Project. CDFW will publish an NOA in a newspaper of general circulation in the Project area announcing its intention to consider the Final EIR for approval.

## 4.8 List of Preparers

A list of persons responsible for the preparation of various sections of the Final EIS and Proposed PA, or who participated to a significant degree in preparing this Final EIS and Proposed PA, is presented in Table 4-1 below.

**TABLE 4-1**
**LIST OF PREPARERS**

| Name | Position | Primary Responsibility |
|---|---|---|
| **BLM California Desert District Office** | | |
| Miriam Liberatore | Project Manager | Managed the BLM NEPA process |
| Kim Marsden | Natural Resources Specialist | Biological Resources |
| **BLM Palm Springs Field Office** | | |
| Dani Ortiz | Wildlife Biologist | Biological Resources |
| George Kline | Archaeologist | Cultural Resources and Tribal Consultation |
| **BLM California State Office** | | |
| James Barnes | Archaeologist | Cultural Resources and Tribal Consultation |
| **CDFW** | | |
| Magdalena Rodriguez | Project Manager | Managed the CDFW CEQA process |
| **USFWS Palm Springs Fish & Wildlife Office** | | |
| Peter Sanzenbacher | Wildlife Biologist | Biological Resources |
| **Environmental Science Associates and Consultant Team** | | |
| Alexandra Thompson | Project Manager and Technical Analyst | Managed the preparation of the Final EIS and Proposed PA, Visual Resources, Lands and Realty, Recreational Resources, Special Designations, Socioeconomics and Environmental Justice, and Wildland Fire Ecology, QA/QC |
| Janna Scott | Project Director | Project oversight and QA/QC |
| Cristina Gispert | Deputy Project Manager | Project management and QA/QC |
| Alexandra Sung-Jereczek | Project Coordinator and Technical Analyst | Project coordination, comment response, and meeting materials |
| Julie Stout | Biologist | Biological Resources |
| Brian Pittman | Biologist | Biological Resources |
| Matt Fagundes | Air Quality and Noise Specialist | Air Resources, Climate Change, and Noise |
| Eric Schniewind | Technical Analyst | Geology, Hazards and Hazardous Materials, and Water Resources |
| Michael Bever | Archaeologist | Cultural, Tribal, and Historic Resources, and Paleontological Resources |
| Shadde Rosenblum | Traffic and Transportation Specialist | Traffic and Transportation |
| Alyssa Bell | Paleontologist | Paleontological Resources |
| Tim Witwer | Technical Analyst | Energy |
| Jessica O’Dell | Technical Analyst | Public Services and Utilities |
| Maria Hensel | Technical Analyst | Lands and Realty, Special Designations |
| Dave Davis | Technical Analyst | Visual Resources |