4.0 ENVIRONMENTAL SETTING AND ANALYSIS

INTRODUCTION

As noted in Section 1.0, *Introduction*, of this Environmental Impact Report (EIR), Aurora Solar, LLC (Aurora Solar or Applicant), a wholly owned subsidiary of Avangrid Renewables, has applied to the California State Lands Commission (CSLC) for lease of State-owned school lands managed by the CSLC on which to construct and operate a 200 megawatt (MW) solar generation project using photovoltaic (PV) and battery storage technologies. The Proposed Project includes the solar generation plant, ancillary project facilities, a battery energy storage system (BESS), and a 220 kilovolt (kV) electrical generation intertie (gen-tie) line. Collectively, these components are called the **Stagecoach Facilities**. In the EIR analysis, the following two major components of the Stagecoach Facilities are evaluated separately:

- The **Stagecoach Solar Generation Plant** includes the solar arrays and collector lines, ancillary project facilities, and the BESS, all located within the 3,570 acres of State-owned school lands
- The **Stagecoach Gen-tie Line** would be located on State-owned lands, leased land, or purchased private land, and would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed Southern California Edison (SCE) Calcite Facilities and the SCE electrical transmission system

The third project component considered in all resource analyses in Section 4 is the **SCE Calcite Facilities**. As described in Section 2.6, *Project Description*, these facilities include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system.

The lead agency under the California Environmental Quality Act (CEQA) for all project components is the CSLC. The California Public Utilities Commission (CPUC) is a Responsible Agency under CEQA for the SCE Calcite Facilities. SCE will submit an application to the CPUC for the SCE Calcite Facilities after the CSLC certifies the EIR, and the CPUC will use the certified Final EIR to consider approval of those facilities.

Each environmental issue analyzed in this EIR describes the existing environmental setting (i.e., baseline conditions prior to Proposed Project implementation) and defines the relationship between baseline conditions and Proposed Project-related impacts. Information sources include field studies and site reconnaissance, online research, planning documents prepared by or for other agencies, and data provided by Aurora Solar for the Stagecoach Facilities and SCE for the Calcite Facilities.

Each section also describes the approach used to analyze impacts, determines the significance of each identified impact, and recommends mitigation measures (MMs) if

feasible to reduce or avoid the Proposed Project's significant impacts. Throughout Section 4.0, numbered statements are used to identify impacts, and mitigation measures are numbered to correspond to the impacts they address (e.g., Impact AQ-1 would be mitigated by MMs AQ-1a and AQ-1b).

Section 4 of this EIR discloses and analyses the potential significant environmental impacts of the Proposed Project. Following are the environmental issues evaluated in Section 4:

- 4.1, Aesthetics/Light and Glare
- 4.2, Air Quality
- 4.3, Biological Resources
- 4.4, Cultural Resources
- 4.5, Cultural Resources – Tribal
- 4.6, Energy
- 4.7, Geology and Soils
- 4.8, Greenhouse Gas Emissions
- 4.9, Hazards and Hazardous Materials
- 4.10, Hydrology and Water Quality
- 4.11, Land Use and Planning
- 4.12, Noise and Vibration
- 4.13, Paleontological Resources
- 4.14, Population and Housing
- 4.15, Public Services, Utilities, and Service Systems
- 4.16, Recreation
- 4.17, Traffic and Transportation
- 4.18, Wildfire

This EIR does not analyze *Agriculture and Forestry Resources* or *Mineral Resources*, as explained below.

RESOURCE AREAS WITH NO IMPACTS OR IMPACTS FOUND NOT TO BE SIGNIFICANT

Based on an initial review and analysis, the Proposed Project would have no impact or a less than significant impact on two environmental issue areas. These two issue areas are not reviewed in detail in this EIR, for the reasons discussed below as required pursuant to State CEQA Guidelines[10] section 15128.

Agriculture and Forestry Resources

The Proposed Project site is delineated by the California Department of Conservation as Grazing Land with no designated Farmland or forest land. According to Department of

[10] The "State CEQA Guidelines" refers to California Code of Regulations, Title 14, Chapter 3.

Conservation agricultural conservation maps, there are no lands enrolled in a Williamson Act contract within the Project area, and no agricultural or forested lands are expected to be directly or indirectly affected by Proposed Project activities (CDOC 2020).

The Stagecoach Solar Generation Plant and a portion of the Stagecoach Gen-tie Line are proposed on undeveloped State-owned school land parcels managed by the CSLC. School lands were placed into a statutory trust in 1984 when the State Legislature approved the School Land Bank Act (Act),[11] created the School Land Bank Fund (Fund) and designated the CSLC as trustee of the Fund. The Act directs that school lands be proactively managed and developed into a permanent and productive resource base for revenue generating purposes (see Section 4.11, *Land Use and Planning*). The Stagecoach Facilities area is designated by the 2020 San Bernardino Countywide Plan as RLM (Resource/Land Management), which has a density of one dwelling unit/40 acres (San Bernardino County 2020b). The RLM designation includes agriculture and resource conservation. However, local zoning would not apply to State lands on which the Stagecoach Solar Generation Plant and portions of the Stagecoach Gen-tie Line are proposed.

Furthermore, the County Development Code provides that an electrical power transmission line is an allowed use, as noted in section 82.03.040 (Agricultural and Resource Management Land Use Zoning District Allowed Uses and Permit Requirements) and section 82.04.040 (Residential Land Use Zoning District Allowed Uses and Permit Requirements). (San Bernardino County 2019a) (see Development Code Table 82-4 and Table 82-7).

The Proposed Project would have no impact on agriculture or forestry resources because it would not:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production
- Result in the loss of forest land or conversion of forest land to non-forest use
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use

Mineral Resources

According to the Mineral Resource Data System, no known mineral resources are on or in the immediate area of the Proposed Project site (USGS 2020). The closest site to the

[11] Public Resources Code Division 7.7 (School Lands), Chapter 1 (School Land Bank Act), added in AB 982 (Skinner), Chapter 485, Statutes of 2011

Stagecoach Facilities is a past producer, Three Colored Marble, located approximately 1.4 miles to the west of the Project site. Another past producer, Richter Dolomite Deposit, is located 0.3 miles east of the proposed Stagecoach Gen-tie Line. Finally, there is a group of three sites approximately 0.6 miles southeast of the proposed SCE Calcite Facilities: Peterson Limestone (past producer) and two locations for Star Dust Group (an occurrence and prospect for tungsten).

The County of San Bernardino does not identify any important mineral resources on or immediately adjacent to the Proposed Project site (San Bernardino County 2020h). The Department of Conservation's Division of Mine Reclamation (DMR) identifies the closest active mine to the Proposed Project site as the Alvic & Alumina Quarry owned by CEMEX, an open pit clay quarry located 2.9 miles west of the proposed solar generation plant (DMR 2020). Neither construction nor operation and maintenance (O&M) of the Proposed Project would interfere with active mining operations. Construction and O&M of the Proposed Project would not restrict or cause loss of availability of any known mineral resources and any unidentified or unknown resources would become available after Proposed Project decommissioning.

Therefore, the Proposed Project would have no impact on mineral resources because it would not result in the loss of availability of: (1) a known mineral resource that would be of value to the region and the residents of the State; or (2) a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

ASSESSMENT METHODOLOGY

Environmental Baseline and Setting

The Proposed Project area includes the CSLC lease area for the solar generation plant and the gen-tie ROW and the SCE Calcite Facilities site where impacts from Proposed Project activities could reasonably be expected. Baseline conditions within this area are defined as the existing physical environmental setting by which a lead agency determines whether an impact is significant. (State CEQA Guidelines, § 15125, subd. (a). See Section 1.5.1, *Baseline and Future Conditions*, for a discussion of the Proposed Project's baseline.) "A significant environmental effect or impact is defined as a substantial or potentially substantial adverse change in the environment." (Pub. Resources Code, §§ 21068, 21100, subd. (d); State CEQA Guidelines, § 15358.) The impact analysis in this EIR examines the changes in the environment that would result from the construction, O&M, and decommissioning of the proposed Stagecoach Solar Generation Plant, Stagecoach Gen-tie Line, and SCE Calcite Facilities.

Regulatory Setting

Each environmental issue is considered in terms of federal, state, regional, and local laws, regulations, and policies applicable to the issue. Appendix A summarizes applicable federal and state laws, regulations, and policies; applicable regional and local laws, regulations, and policies are identified in each environmental issue section.

Components of the San Bernardino County General Plan are described in the Regulatory Setting for each resource area that has relevant policies or regulations. The following documents contain County policies relevant to the Proposed Project area:

- The ***2020 County Policy Plan*** *(*a component of the ***San Bernardino Countywide Plan)*** serves as the County's General Plan. It was adopted on October 27, 2020. This ***2020 County Policy Plan*** provides the basis for, and is implemented by, the County's Development Code, which includes a set of Land Use Zoning Districts that establishes detailed land use districts, intensities, requirements, and standards.
- The ***San Bernardino County 2007 Development Code*** (as amended in May 2019) implements the County's General Plan
- The County of San Bernardino General Plan's ***Renewable Energy and Conservation Element*** was adopted August 8, 2017, and amended February 28, 2019. This element was not updated in the 2020 County Policy Plan and was incorporated in its entirety, upon its adoption, into the San Bernardino Countywide Plan.
- The ***Lucerne Valley Community Action Guide (2020 Draft)*** is a component of the San Bernardino Countywide Plan that defines goals, policies, and actions for the Lucerne Valley area

As State entities, the CSLC (with regard to the Stagecoach Facilities) and the CPUC (with regard to the SCE Calcite Facilities) are exempt from complying with local or county plans, policies, or zoning regulations. This EIR need not, as a matter of law, consider such plans, policies, and regulations. Nevertheless, in the exercise of its discretion, the CSLC does reference, describe, and address local land use plans, policies, and regulations in its evaluation of the Proposed Project. Consideration of these plans, policies, and regulations will therefore assist the CSLC and the CPUC in determining whether the Proposed Project may conflict with nearby land uses that could result in potentially significant environmental impacts.

Approximately 3 miles of the Stagecoach Gen-tie Line would be on State lands, requiring a lease from the CSLC, and the remaining approximately 6 miles would be on private land in County jurisdiction. By considering consistency of the Proposed Project with the *2020 County Policy Plan*, this EIR will provide the County with the information necessary to make the consistency determination related to any discretionary decisions it may be required to make.

Significance Criteria

Significance criteria are identified for each environmental issue. These criteria serve as benchmarks for determining if a Proposed Project component or activity would result in significant adverse environmental impacts when evaluated against baseline conditions. A significant effect on the environment means “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project….” (State CEQA Guidelines, § 15382.) Significance criteria relevant to each section are drawn from a variety of sources, including Appendix G of the State CEQA Guidelines and applicable local regulatory agency policies and standards indicated within each section. Some impact categories in this EIR lend themselves to scientific or mathematical analysis and quantification, while others are more qualitative. Some issues, such as air quality, have significance thresholds established by agencies with regulatory authority for that resource. Significance criteria selection and the determination of impact significance are based on the independent judgment of the CSLC, as CEQA lead agency, and the CPUC as the regulatory agency using the EIR analysis for CEQA permitting of the SCE Calcite Facilities.

Impact Analysis

The terms “effect” and “impact” used in this document are synonymous and can refer to effects that are either adverse or beneficial.

- Direct effects: Effects caused by the Proposed Project that occur at the same time and place as the Proposed Project
- Indirect effects: Effects caused by the Proposed Project that occur later in time, or further in distance, but are still reasonably foreseeable
- Residual impacts: Impacts that still meet or exceed significance criteria after application of mitigation and, therefore, remain significant
- Cumulative impacts: Impacts resulting from the Proposed Project when combined with similar effects of other past, present, and reasonably foreseeable future projects, regardless of which agency or person undertakes such projects (cumulative impacts could result from individually insignificant but collectively significant actions taking place over time)
- Short-term impacts: Impacts expected to occur during construction or decommissioning that do not have lingering effects for an extended period after the activity is completed
- Long-term impacts: Impacts that would persist for an extended period of time

The significance of each impact is determined based on an analysis of the impact, compliance with any recommended mitigation measure, and the level of impact remaining

compared to the applicable significance criteria. Impacts are classified as one of the five categories listed below.

- Significant and Unavoidable: A substantial or potentially substantial adverse change from the environmental baseline that meets or exceeds significance criteria, where either no feasible mitigation can be implemented, or the impact remains significant after implementation of mitigation measures
- Less than Significant with Mitigation: A substantial or potentially substantial adverse change from the environmental baseline that can be avoided or reduced to below applicable significance thresholds
- Less than Significant: An adverse impact that does not meet or exceed the significance criteria of a particular environmental issue area and, therefore, does not require mitigation
- Beneficial: An impact that would result in an improvement to the physical environment relative to baseline conditions
- No Impact: A change associated with the Proposed Project that would not result in an impact to the physical environment relative to baseline conditions

The analysis in this EIR is prepared with the understanding that the Applicants would obtain all required permits and approvals from other agencies and comply with all legally applicable terms and conditions associated with those permits and approvals. Implementation of the Proposed Project, which is described in Section 2.0, *Project Description*, including implementation of MMs identified to reduce or avoid significant adverse impacts, would be monitored in accordance with a Mitigation Monitoring Program (MMP) (summarized below).

Mitigation and Mitigation Monitoring Program

An EIR is required to indicate the way any significant effects on the environment of a project can be mitigated or avoided; a governmental agency must prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives (discussed below) or MMs when the agency finds the changes to be feasible. (Pub. Resources Code, § 21002.1, subd. (a) & (b); State CEQA Guidelines, § 15002, subd. (a).) Implementation of multiple MMs may be needed to reduce an impact to a less than significant level. Impacts that still meet or exceed significance criteria after application of MMs are considered residual impacts that remain significant.

Under CEQA, the lead agency must adopt a reporting or monitoring program for any changes made to the Proposed Project or conditions of project approval adopted to mitigate or avoid significant effects on the environment (i.e., MMP). (Pub. Resources Code, § 21081.6, subd. (a)(1).) The impact sections throughout Section 4.0, and Section 7.0, *Mitigation Monitoring Program*, identify all MMs to reduce significant impacts. All MMs

included in a CSLC-adopted MMP become lease conditions. The CSLC, or its designee(s) would ensure implementation of all MMs.

Cumulative Impacts Analysis

An EIR must discuss the cumulative impacts of a project when that project's incremental effect is "cumulatively considerable." (State CEQA Guidelines, § 15130.) A cumulative impact is an impact created through a combination of the project and other projects that cause similar impacts. Section 3.0, *Cumulative Projects*, lists closely related projects to be included in the cumulative environment. The impact analysis for cumulative impacts is presented at the end of each environmental issue section within Section 4.0, *Environmental Impact Analysis* (e.g., at the end of Section 4.1, *Aesthetics/Light and Glare*, Section 4.2, *Air Quality*, etc.).

Key elements to consider when assessing cumulative impacts include:

- The type and characteristics of the resource (e.g., aesthetics, air quality, biological resources, cultural resources)
- The geographic (spatial) limits of a cumulative effect; for example, noise impacts are typically localized, while air quality impacts tend to disperse over a large area
- The timing and duration of the Proposed Project relative to the past, present, and reasonably foreseeable cumulative projects identified (such as the construction season for temporary construction projects or long-term operation if applicable)

To assess whether impacts of the Proposed Project and closely related projects are cumulatively considerable, this EIR considers the following circumstances: the type of resource affected; the proximity of the projects; where an impact might occur; when projects may occur; and the duration of the Proposed Project's construction impacts. The geographic scope of cumulative effects may extend beyond the scope of the direct, but not indirect, Proposed Project effects. The approach and geographic scope of the cumulative impact evaluation vary depending on the environmental topic area being analyzed. The Cumulative Impacts subsections in Section 4.1 through 4.18 address impacts and mitigation measures for the Proposed Project when combined with the cumulative projects presented in Section 3.0. Each impact begins with a summary of the approach and the geographic area relevant to that environmental topic area. The list of potentially relevant projects, a detailed methodology, and relevant planning documents are considered in each Cumulative Impacts subsection.

Since each cumulative project has its own implementation schedule, it may or may not overlap with the Proposed Project schedule. Therefore, this EIR would likely represent a "worst-case" scenario since it assumes that all cumulative projects will be approved, constructed, or coincide with Proposed Project activities. Other projects would likely be, or have been, subject to unspecified mitigation measures that would reduce their impacts and thereby reduce the potential for contributing to cumulative impacts.

Impacts of Alternatives

Pursuant to State CEQA Guidelines section 15126.6, an EIR must describe and evaluate a range of reasonable alternatives that would feasibly attain most of the project's basic objectives and would avoid or substantially lessen any of the significant impacts of the project as proposed. The range of alternatives is governed by the "rule of reason," that is, an EIR needs to describe and evaluate only those alternatives necessary to permit a reasoned choice and to foster informed decision making and public participation. (State CEQA Guidelines, § 15126.6, subd. (f))

This section of the EIR (Section 4) presents the analysis of impacts of the Proposed Project, including the Stagecoach Facilities and the SCE Calcite Facilities. Section 5.0, *Alternatives Screening, Identification, and Impact Analysis*, describes alternatives to the Proposed Project and includes the impact analysis for each alternative scenario considered. A summary of the alternatives analysis is also included in Section 6.0, *Other Required CEQA Sections and Environmentally Superior Alternative.*

4.1 AESTHETICS/LIGHT AND GLARE

This section describes the aesthetic qualities of the Proposed Project study area, evaluates the type and significance of impacts that may occur as a result of the Proposed Project and alternatives, and identifies measures to avoid or substantially lessen any impacts found to be potentially significant.

Aesthetics or visual resources (used interchangeably throughout this section) refer to visual considerations in the physical environment. Aesthetic analysis is a systematic process to logically assess visible change in the physical environment and the anticipated viewer response to that change. Landforms, water, vegetation patterns, and built structures are among the landscape features that define an area's visual character.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system

4.1.1 Environmental Setting

This section describes the existing landscape character and visual quality of the study area and region, as well as the existing views of the Proposed Project area and alternatives from various on-the-ground vantage points called Key Observation Points (KOPs).

4.1.1.1 Approach to Data Collection

The visual resources technical approach incorporated both a regional perspective and site-specific, detailed landscape assessments utilizing the Visual Sensitivity–Visual Change (VS-VC) method. Under the VS-VC method, the Proposed Project was evaluated from

various public roads and vantage points to develop an overall assessment of the existing landscape character, visual quality, and viewing conditions. Then at representative KOPs, the existing landscape was characterized for visual quality, viewer concern, and viewer exposure, and photographed.

KOPs are representative, stationary viewing locations selected for the purpose of analyzing and describing existing visual resources in the Proposed Project study area and for preparing visual simulations and conducting impact assessments. KOPs were generally selected to be representative of the most critical public viewing locations from which the Proposed Project would be seen. Three KOPs (Numbers 1 through 3) were selected to characterize the local setting of the proposed solar fields and ancillary facilities (e.g., battery storage area, substation, and administration buildings). Two KOPs (Numbers 4 and 5) were selected to characterize the local setting of the gen-tie line route. One KOP (Number 6) was selected to evaluate the proposed SCE Calcite Facilities. Each of the six KOPs is shown on the KOP map presented as Figure 4.1-1.

Each of the factors considered in the evaluation of the existing landscape at each KOP is discussed below, and the individual KOP analyses are presented in Section 4.1.1.3.

Visual Quality is a measure of the overall impression or appeal of an area as determined by particular landscape characteristics such as landforms, rockforms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (Low), common (Moderate), and distinctive (High). Visual quality is studied as a point of reference to assess whether a given project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them.

Viewer Concern addresses the level of interest or concern of viewers regarding an area's visual resources (rated from Low to High) and is closely associated with viewers' expectations for the area. Viewer concern reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rockforms, water features, vegetation patterns, and even cultural features.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape (rated from Low to High). Viewer exposure considers landscape visibility (the ability to see the landscape), distance zones (proximity of viewers to the subject landscape; Foreground, Middleground, and Background), number of viewers (Low to High), and the duration of view (Brief to Extended).

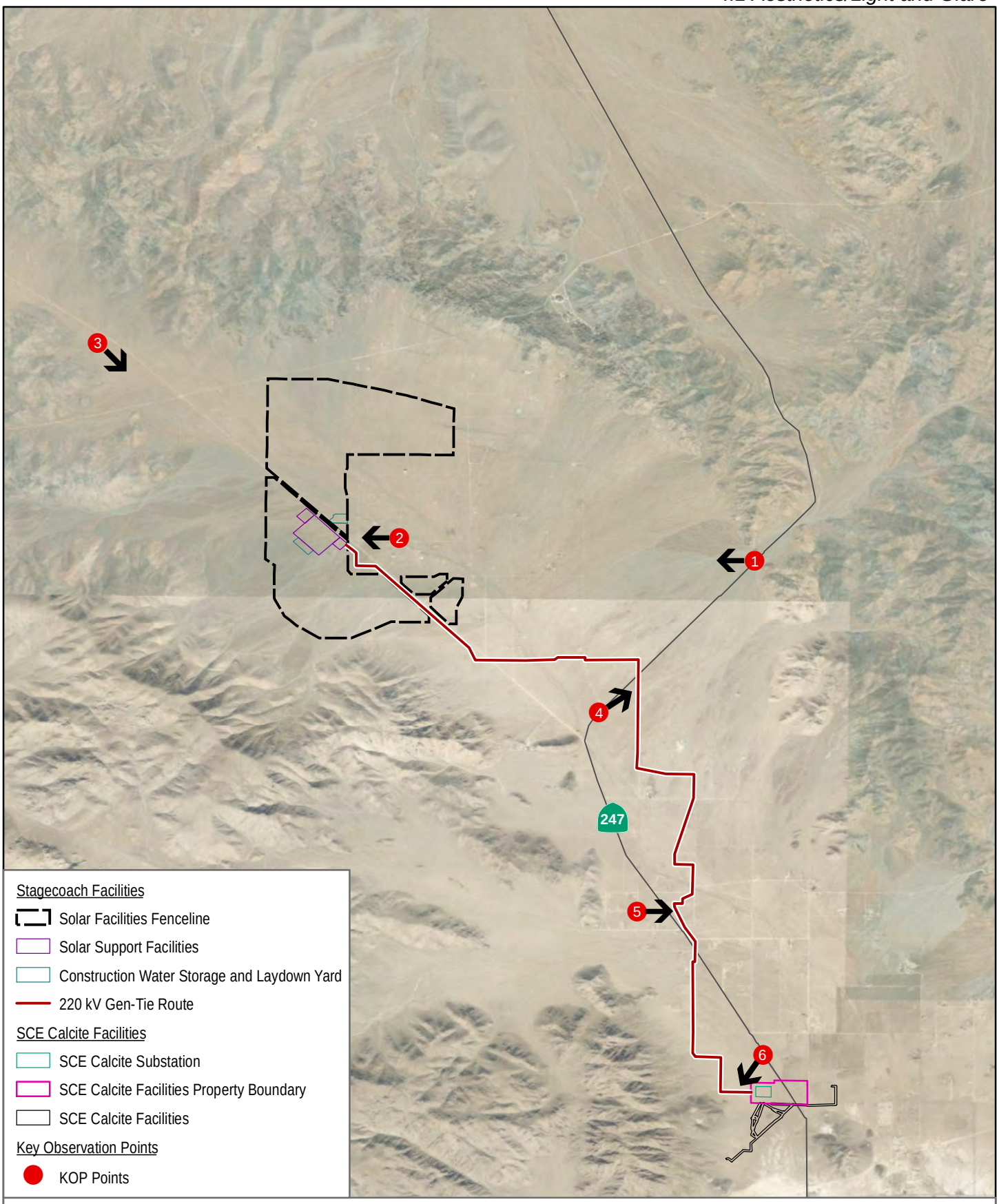


Figure 4.1-1

Key Observation Point Map

Landscape visibility can be a function of several interconnected considerations including proximity to a viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and/or presence or absence of screening features such as landforms, vegetation, and/or built structures. Even though a landscape may have highly scenic qualities, it may be remote, receiving relatively few visitors and, thus, has a lower degree of viewer exposure. Conversely, a subject landscape or project may be situated in relatively close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features. Often, it is the subject area's proximity to viewers, or distance zone, that is of particular importance in determining viewer exposure. Landscapes are generally subdivided into three or four distance zones based on relative visibility from travel routes or observation points. As noted above, distance zones typically include Foreground, Middleground, and Background. The actual number of zones and distance assigned to each zone is dependent on the existing terrain characteristics and public policy and is often determined on a project-by-project basis.

Overall Visual Sensitivity is a concluding assessment of an existing landscape's susceptibility to an adverse visual outcome (rated from Low to High). A landscape with a high degree of visual sensitivity is able to accommodate only a low degree of adverse visual change without resulting in a substantial visual effect. A landscape with a low degree of visual sensitivity is able to accommodate a high degree of adverse visual change before exhibiting a substantial visual effect. Overall visual sensitivity is derived from a comparison of existing visual quality, viewer concern, and viewer exposure.

4.1.1.2 Regional Setting

The Proposed Project would be located generally within the Western Mojave Desert Geographic Region and, specifically, in the Lucerne and North Lucerne valleys of San Bernardino County (County). Lucerne Valley is located north of the San Bernardino Mountains and approximately 20 miles east of Victorville. The valley extends northward along State Route 247 (SR-247, or Barstow Road) approximately 12 miles north of the Community of Lucerne Valley. Lucerne Valley Cutoff (unpaved road) branches off SR-247 to the northwest across the shallow bowl of North Lucerne Valley, which is generally defined by Stoddard Ridge to the north and Sidewinder Mountain to the south. The solar generation plant would be located within North Lucerne Valley with the necessary gen-tie transmission line extending southwest along SR-247 in Lucerne Valley to the proposed SCE Calcite Facilities near the intersection with Haynes Road.

Elevations in the Proposed Project study area range from a low of approximately 2,900 feet near the proposed location for the SCE Calcite Facilities in the south to a high of 5,273 feet at Sidewinder Mountain peak. The most prevalent vegetation community is creosote bush scrub. Much of the Proposed Project study area can be characterized as open space public lands with isolated, rural residential enclaves and homesteads.

While there are no State-Designated Scenic Highways in the study area, SR-247 is a State-Eligible Scenic Highway (California Department of Transportation [Caltrans] 2020a). SR-247 is also a County-Designated Scenic Highway (San Bernardino County 2007). A monastery is located approximately 1.5 miles southeast of the proposed solar generation plant near the intersection of Lucerne Valley Cutoff and SR-247.

4.1.1.3 Environmental Setting of the Stagecoach Solar Generation Plant

The solar generation and ancillary facilities would occupy approximately 1,975 acres within the larger 3,570-acre Proposed Project boundary in North Lucerne Valley. These facilities would be located on a gently sloping area of alluvial material, which is divided into separate northern and southern areas by Lucerne Valley Cutoff. Elevations on site range from approximately 3,206 feet in the southeasternmost solar field on the north side of Lucerne Valley Cutoff to approximately 3,563 feet at the southwest corner of the solar fields, south of Lucerne Valley Cutoff. The solar generation plant site contains no significant topographic features, while microtopographic features are generally associated with drainage channels that traverse a majority of the site. The Proposed Project site consists of undeveloped land not currently subject to active use and is presently absent any source of night lighting. The overall appearance is that of a predominantly undeveloped, natural-appearing desert landscape dominated by rugged to gently rolling ridgelines and a broad, flat desert valley.

Surrounding land uses consist primarily of undeveloped land and a few scattered residential properties. Lucerne Valley Cutoff is a popular four-wheel drive road linking the Stoddard Valley Off-Highway Vehicle (OHV) Recreation Area northwest of the Proposed Project site with the Ord Mountain OHV Route Network east of the Proposed Project site. Views of the Proposed Project site would be primarily attributable to the few nearby rural residences, backcountry travelers on Lucerne Valley Cutoff and associated four-wheel drive trails, and travelers on SR-247.

<u>KOP 1 – SR-247 Southbound</u>

Figure 4.1-2a presents the existing view to the west from KOP 1 on southbound SR-247 in Lucerne Valley, approximately 3.5 miles east of the solar fields in North Lucerne Valley. (This figure is presented with the simulation from the same location; see Section 4.1.4.1.) The view from KOP 1 captures much of North Lucerne Valley, which is topographically flat and vegetated with low-growing shrubs. Sidewinder Mountain and the more distant Stoddard Mountain define the southern and western extents of the valley and provide features of visual interest.

Visual Quality. Moderate. This unobstructed, panoramic view up North Lucerne Valley encompasses a foreground to middleground relatively natural-appearing desert valley that is backdropped by rounded to horizontal to angular hills and ridges that add visual interest. The smooth- to granular- and coarse-textured landforms exhibit coloration that transitions

from tans and browns to lavender and bluish hues at distance. Vegetation consists of grasses and shrubs, and its distribution is fairly even with some patchiness. Vegetation coloration includes tans and pale- to golden-yellow for grasses, and tans to muted greens for shrubs, exhibiting an overall matte-textured appearance. Although the natural landscape features are relatively common and non-descript, the bordering hills and ridges provide features of visual interest. There are very few built features discernible in the view from KOP 1. The existing view image presented for KOP 1 is slightly compromised by the smoke haze from regional wildfires.

Viewer Concern. High. Travelers on SR-247 (a State-Eligible and County-Designated Scenic Highway) anticipate the relatively unspoiled panoramic views up North Lucerne Valley to the surrounding mountains and ridgelines. Any addition of industrial character to the predominantly natural-appearing landscape or structural elements causing blockage of views to more valued landscape features (valley floor, background mountains, sky) would be seen as an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project site would be highly visible in the middleground views of travelers on SR-247. The number of viewers would be High, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 1, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 2 – Althouse Road

Figure 4.1-3a presents the existing view to the west from KOP 2 on Althouse Road, approximately 0.2 miles east of Gazelle Road, amidst the dispersed rural residences in North Lucerne Valley. (This figure is presented with the simulation from the same location; see Section 4.1.4.1.) This view primarily captures a portion of the flat valley floor, alluvial fans, and rolling hills south of Lucerne Valley Cutoff.

Visual Quality. Moderate. This open, unobstructed view to the west toward the northern foothills of Sidewinder Mountain encompasses a foreground to middleground natural-appearing flat, desert valley landscape that is backdropped by rounded to horizontal to angular hills and ridges that add visual interest. The smooth- to granular- and coarse-textured landforms exhibit coloration that transitions from tans and browns to lavender hues at distance. Vegetation consists of grasses and shrubs, and its distribution is fairly even with some patchiness in the distance. Vegetation coloration includes tans and pale- to golden-yellow for grasses and reddish tans to muted greens for shrubs, exhibiting an overall matte-textured appearance. Although the natural landscape features are relatively

common and non-descript, the hills in the background add some visual interest along the southern boundary of the valley. The absence of built features in the view presented for KOP 2 is notable, although there are a very few dispersed rural residences nearby.

Viewer Concern. High. Nearby rural residents and travelers on Althouse Road, other residential access roads, and Lucerne Valley Cutoff anticipate the relatively unspoiled open views of North Lucerne Valley and surrounding hills and mountains. Any addition of industrial character to the predominantly natural-appearing landscape or blockage of views to more valued landscape features (valley floor, background mountains, sky) would be seen as an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project site would be highly visible in the foreground views of nearby rural residents and recreational travelers. While the number of viewers would be Low, the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 2, combining the equally weighted Moderate visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

KOP 3 – Lucerne Valley Cutoff – North

Figure 4.1-4a presents the existing view to the southeast from KOP 3 at the rock outcrop adjacent to Lucerne Valley Cutoff approximately 6.1 miles northwest of the intersection with SR-247. (This figure is presented with the simulation from the same location; see Section 4.1.4.1.) This perspective encompasses much of the wide-open bowl comprising North Lucerne Valley.

Visual Quality. Moderate to High. This unobstructed, slightly elevated, panoramic view down North Lucerne Valley encompasses a foreground to middleground relatively natural-appearing and picturesque desert valley that is backdropped by rounded to horizontal to angular hills and ridges that add visual interest. To the north (left in Figure 4.1-4a) is the southwestern extent of the Ord Mountains. To the south (right in Figure 4.1-4a) is Sidewinder Mountain. The smooth- to granular- and coarse-textured landforms exhibit coloration that transitions from tans and browns to lavender and bluish hues at distance. Vegetation consists primarily of grasses and shrubs with a fairly even distribution with some patchiness, punctuated by the more distinctive cholla cacti, which enhance visual interest. Vegetation coloration includes tans and pale- to golden-yellow for grasses, and tans to muted greens for shrubs, exhibiting an overall matte-textured appearance that is common to the high desert valleys. The Ord Mountains and Sidewinder Mountain are prominent features that add visual interest when juxtaposed to the open, relatively flat bowl of North Lucerne Valley. There are few noticeable built features in the view from KOP 3.

The existing view image presented for KOP 3 is slightly compromised by the smoke haze from regional wildfires.

Viewer Concern. High. Recreational travelers and nearby rural residents anticipate the relatively unspoiled panoramic views of North Lucerne Valley and surrounding mountains. Any addition of industrial character to the predominantly natural-appearing landscape or blockage of views to more valued landscape features (valley floor, background mountains, sky) would be seen as an adverse visual change.

Viewer Exposure. Moderate to High. The Proposed Project site would be highly visible in the foreground views of recreational travelers and nearby rural residents. The number of viewers would be Low, but the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of Moderate to High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 3, combining the equally weighted Moderate to High visual quality, High viewer concern, and Moderate to High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

4.1.1.4 Environmental Setting of the Stagecoach Gen-tie Line

The gen-tie line would extend east from the solar generation plant in North Lucerne Valley to cross to the east side of SR-247 before turning south to connect to the proposed SCE Calcite Facilities near Haynes Road in Lucerne Valley, a distance of approximately 9.1 miles. The environmental setting of that portion of the gen-tie line located in North Lucerne Valley would be the same as presented in Section 4.1.1.3 above, to which the reader is referred.

Within Lucerne Valley, the gen-tie line passes along a relatively flat valley floor that ranges in elevation from approximately 2,909 feet at the southern terminus where the gen-tie line would connect with the proposed SCE Calcite Facilities to approximately 3,222 feet at the northernmost gen-tie turning point on the west side of SR-247 in Lucerne Valley. The gen-tie route through Lucerne Valley crosses no significant topographic features. The overall appearance of this portion of the valley is that of a predominantly undeveloped, natural-appearing high desert landscape dominated by a broad, flat desert valley, which is ringed by rugged, angular ridges to gently rolling hills, which include Sidewinder Mountain and the Granite Mountains to the west and the Ord Mountains to the east. The northern portion of Lucerne Valley is notable for the absence of built structures including utility infrastructure.

Surrounding land uses consist primarily of undeveloped land and a few scattered residential properties, which become more numerous in the central portion of the valley farther to the south. Views of the gen-tie route would be primarily attributable to the nearby

rural residences (in the central portion of the route) and travelers on SR-247, which as noted above, is a State-Eligible and County-Designated Scenic Highway.

KOP 4 – SR-247 Northbound

Figure 4.1-5a presents the existing view to the north-northeast from KOP 4 on northbound SR-247 in Lucerne Valley, approximately 0.4 miles north of the intersection with Lucerne Valley Cutoff. (This figure is presented with the simulation from the same location; see Section 4.1.4.2.) The view from KOP 4 captures the northern portion of Lucerne Valley where SR-247 approaches and then passes between Stoddard Ridge on the west and the Ord Mountains on the east. The juxtaposition of the abruptly rising, rugged, angular ridges and mountains with the flat, uniformly vegetated valley floor enhances the scenic quality of this open, panoramic view, which is absent any distracting, built features.

Visual Quality. Moderate to High. This unobstructed, panoramic view up Lucerne Valley encompasses a foreground to middleground natural-appearing desert valley that is backdropped by rounded to horizontal to angular hills and ridges that add visual interest. The smooth- to granular- and coarse-textured landforms exhibit coloration that transitions from tans and browns to lavender and bluish hues at distance. Vegetation consists of grasses and shrubs that appear somewhat patchy in the immediate foreground but transitions to a more uniform appearance with distance. Vegetation coloration includes tans and pale- to golden-yellow for grasses, and tans to muted greens for shrubs, exhibiting an overall matte-textured appearance. Although the natural landscape features are relatively common of high desert landscapes, the absence of visual intrusions such as land scarring along the ridges and mountains from mineral extraction activities or electric utility facilities along the valley floor contribute to a more pristine, natural character that is becoming increasingly uncommon in high desert landscapes.

Viewer Concern. High. Travelers on SR-247 (an Eligible State- and County-Designated Scenic Highway) anticipate the relatively unspoiled panoramic views of the surrounding mountains and ridgelines along this portion of Lucerne Valley. Any addition of industrial character to the predominantly natural-appearing landscape or structural elements causing degradation of views to more valued landscape features (valley floor, background mountains, or sky) would be seen as an adverse visual change.

Viewer Exposure. High. The gen-tie route would be highly visible in the foreground to middleground views of travelers on SR-247. The number of viewers would be High, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. High. For viewers in the vicinity of KOP 4, combining the equally weighted Moderate to High visual quality, High viewer concern, and High viewer

exposure results in an overall rating of High for visual sensitivity of the visual setting and viewing characteristics.

KOP 5 – Algoman Avenue

Figure 4.1-6a presents the existing view to the east from KOP 5 on Algoman Avenue, north of Brucite Street, in Lucerne Valley. (This figure is presented with the simulation from the same location; see Section 4.1.4.2.) The view from KOP 5 captures a central portion of Lucerne Valley where vertical (wood) utility poles are visible in the rural landscape east of SR-247. The flat, expansive valley is backdropped by the rugged southern extension of the Ord Mountains and hosts several rural residences.

Visual Quality. Moderate. This panoramic view across the central portion of Lucerne Valley encompasses a foreground to middleground high desert valley rural landscape that is backdropped by the horizontal to angular and jagged ridges of the southern extension of the Ord Mountains. The smooth- to granular- and coarse-textured landforms exhibit coloration that transitions from tans and browns to lavender and bluish hues at distance. Vegetation consists of grasses and shrubs, and its distribution is fairly even with some patchiness. Vegetation coloration includes tans and pale- to golden-yellow for grasses, and tans to muted greens for shrubs, exhibiting an overall matte-textured appearance. Although the natural landscape features are relatively common of high desert valley landscapes, the background hills and ridges do provide features of visual interest. However, the natural landscape character and associated visual quality is somewhat compromised by the scattered rural residential features and presence of wood utility poles, though the rough-hewn, weathered character of the wood poles does not appear out of place in this rural landscape.

Viewer Concern. High. Travelers on SR-247 (a State-Eligible and County-Designated Scenic Highway) anticipate a relatively natural-appearing rural landscape with panoramic views of the surrounding mountains and ridgelines along this portion of Lucerne Valley. Although scattered rural residences and wood utility poles are visible in the foreground to middleground views from the highway, any addition of built features with industrial character or structural elements causing degradation of views to more valued landscape features (valley floor, background mountains, sky), would be seen as an adverse visual change.

Viewer Exposure. High. The gen-tie route would be highly visible in the foreground to middleground views of travelers on SR-247. The number of viewers would be High, and the duration of view would be Moderate to Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 5, combining the equally weighted Moderate visual quality, High viewer concern, and High

viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

4.1.1.5 Environmental Setting of the SCE Calcite Facilities

The proposed SCE Calcite Facilities would be located on an approximately 75-acre parcel of land that extends on the west and east sides of SR-247, just north of Haynes Road and immediately east of the Granite Mountains. The substation facilities would be situated on approximately 7 acres on the west side of SR-247 and would interconnect with the SCE transmission line corridor to the immediate south of the substation site.

The substation site would be located on the valley floor in close proximity to viewers on SR-247 (a State-Eligible and County-Designated Scenic Highway). With the exception of the existing SCE electric transmission line corridor that passes northeast to southwest through this portion of the valley, the overall landscape appearance is that of a predominantly undeveloped, natural-appearing high desert valley, bordered by the rugged, angular ridges of the Granite Mountains to the west and the distant San Bernardino Mountains to the south. While the existing transmission structures are large industrial features, the “transparent” nature of these lattice structures helps to lessen their visual prominence and contrast when viewed from a distance.

KOP 6 – SCE Calcite Facilities

Figure 4.1-7a presents the existing view to the south-southwest from KOP 6 on southbound SR-247, approximately 0.84 miles north of the intersection with Haynes Road. (This figure is presented with the simulation from the same location; see Section 4.1.4.3.) The view from KOP 6 captures the proposed location for the SCE Calcite Facilities to be located east of the Granite Mountains (right side of the image) and north of an existing SCE transmission line corridor (visible in the center of the image). In the distance are the San Bernardino Mountains, which arise abruptly from, and provide the southern boundary of, Lucerne Valley.

Visual Quality. Moderate. This panoramic view down Lucerne Valley captures the open expanse of the southern portion of the valley, which from KOP 6, appears predominantly undeveloped with the exception of the SCE electric transmission corridor facilities. This high desert valley is backdropped by the horizontal to angular San Bernardino Mountains, which along with the adjacent Granite Mountains, enhance visual quality. These smooth to granular and coarse-textured landforms exhibit coloration that transitions from tans and browns to lavender and bluish hues at distance. Vegetation within the valley consists of grasses and shrubs, and its distribution is fairly even with some patchiness. Vegetation coloration includes tans and pale- to golden-yellow for grasses, and tans to muted greens for shrubs, exhibiting an overall matte-textured appearance. Although the natural landscape features are relatively common of high desert valley landscapes, the adjacent and background ridges and mountains do provide features of visual interest when

juxtaposed with the flat valley floor. However, the natural landscape character and associated visual quality are somewhat compromised by the presence of the electric transmission line corridor with its structural complexity, inherent industrial character, and associated visual contrast.

Viewer Concern. High. Travelers on SR-247 (a State-Eligible and County-Designated Scenic Highway) anticipate a relatively natural-appearing rural landscape with panoramic views and uninterrupted sightlines of the ridges and distant mountains surrounding this portion of Lucerne Valley. Although an existing transmission line corridor is visible in the foreground to middleground views from KOP 6, the lattice design of the structures renders the facilities somewhat "transparent," which somewhat reduces both the apparent structural prominence and the associated visual contrast. However, any addition of built features with industrial character or structural elements causing degradation or disruption of views to more valued landscape features (valley floor, background mountains and ridgelines, sky), would be seen as an adverse visual change.

Viewer Exposure. High. The proposed SCE Calcite Facilities site would be highly visible in the foreground to middleground views of travelers on SR-247. The number of viewers would be High, and the duration of view would be Extended. Combining the four equally weighted factors (i.e., visibility, distance zone, number of viewers, and duration of view) results in an overall rating of High for viewer exposure.

Overall Visual Sensitivity. Moderate to High. For viewers in the vicinity of KOP 5, combining the equally weighted Moderate visual quality, High viewer concern, and High viewer exposure results in an overall rating of Moderate to High for visual sensitivity of the visual setting and viewing characteristics.

4.1.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the project are summarized in Appendix A. Local policies are summarized below.

A number of County policies address protection of visual resources, vistas, and consistency with existing visual setting. These policies contained within the 2020 County Policy Plan (including the Lucerne Valley Community Action Guide) as adopted on October 27, 2020. The County Policy Plan serves as the County's General Plan. Other relevant County policies are defined in the San Bernardino County 2007 Development Code as amended January 16, 2014; and the County of San Bernardino General Plan Renewable Energy and Conservation Element as adopted August 8, 2017, and amended February 28, 2019. The relevant policies are summarized below.

San Bernardino Countywide Plan: 2020 County Policy Plan

Goal LU-2. Land Use Mix and Compatibility

- ***Policy LU-2.3 – Compatibility with Natural Environment.*** *We require that new development is located, scaled, buffered, and designed for compatibility with the surrounding natural environment and biodiversity.*

Goal LU-4. Community Design

- ***Policy LU-4.1 – Context-sensitive Design in the Mountain/Desert Regions.*** *We require new development to employ site and building design techniques and use building materials that reflect the natural mountain or desert environment and preserve scenic resources.*
- ***Policy LU-4.7 – Dark Skies.*** *We minimize light pollution and glare to preserve views of the night sky, particularly in the Mountain and Desert regions where dark skies are fundamentally connected to community identities and local economies. We also promote the preservation of dark skies to assist the military in testing, training, and operations*

Goal IU-5. Power and Communications

- ***Policy IU-5.3 – Underground Facilities.*** *We encourage new and relocated power and communication facilities to be located underground when feasible, particularly in the Mountain and Desert regions.*

Goal NR-4. Scenic Resources.

- ***Policy NR-4.1 – Preservation of Scenic Resources.*** *We consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.*
- ***Policy NR-4.3 – Off-site Signage.*** *We prohibit new off-site signage and encourage the removal of existing off-site signage along or within view of County Scenic Routes and State Scenic Highways.*

San Bernardino County Renewable Energy and Conservation Element

RE Goal 4. The County will establish a new era of sustainable energy production and consumption in the context of sound resource conservation and renewable energy development practices that reduce greenhouse gases and dependency on fossil fuels.

- ***RE Policy 4.4*** *– Encourage siting, construction and screening of RE generation facilities to avoid, minimize or mitigate significant changes to the visual environment including minimizing light and glare*
- ***RE 4.4.1:*** *Reduce visual impacts through a combination of minimized reflective surfaces, context-sensitive color treatments, nature-oriented geometry, minimized vegetation clearing under and around arrays, conservation of pre-existing native plants, replanting of native plants as appropriate, maintenance of natural*

landscapes around the edges of facility complexes, and lighting design to minimize night-sky impacts, including attraction of and impact to nocturnal migratory birds

RE Goal 5. Renewable energy facilities will be located in areas that meet County standards, local values, community needs and environmental and cultural resource protection priorities.

- ***RE Policy 5.7*** *– Support renewable energy projects that are compatible with protection of the scenic and recreational assets that define San Bernardino County for its residents and make it a destination for tourists*
- ***RE 5.7.1:*** *Site RE generation facilities in a manner that will avoid, minimize or substantially mitigate adverse impacts to sensitive habitats, cultural resources, surrounding land uses, and scenic viewsheds*

San Bernardino County 2007 Development Code (Amended 2019)

82.19.040 Development Criteria within Scenic Areas

- *(a) Applicability. The criteria below shall be used to evaluate a land use proposed within a scenic area in an Open Space Overlay and shall apply to:*
  - *(1) Areas with unique views of the County's desert, mountain and valley areas or any other aesthetic natural land formations*
  - *(2) An area extending 200 feet on both sides of the ultimate road right-of-way of State and County designated Scenic Highways as identified in the General Plan. The area covered may vary to reflect the changing topography and vegetation along the right-of-way.*
- *(b) Report. A special viewshed analysis may be required if it is determined that the proposed project may have a significant negative impact on the scenic values of the subject parcel.*
- *(c) Building and structure placement. Structure placement shall be compatible with and shall not detract from the visual setting or obstruct significant views.*
- *(h) Above ground facilities. Utilities shall be constructed and routed underground except in those situations where natural features prevent the underground siting or where safety considerations necessitate above ground construction and routing. Above ground utilities shall be constructed and routed to minimize detrimental effects on the visual setting of the designated area. Where it is practical, above ground utilities shall be screened from view from either the Scenic Highway or the adjacent scenic or recreational resource by existing topography, or by placement of structures.*

84.29.035 Required Findings for Approval of a Commercial Solar Energy Facility

- *(a) In order to approve a commercial solar energy generation facility, the Planning Commission shall, in addition to making the findings required under section 85.06.040(a) of the San Bernardino County Development Code, determine that the location of the proposed commercial solar energy facility is appropriate in relation to the desirability and future development of communities, neighborhoods, and rural*

residential uses, and will not lead to loss of the scenic desert qualities that are key to maintaining a vibrant desert tourist economy by making each of the findings of fact in subdivision (c)

- *(c) The finding of fact shall include the following:*
  - *(3) The siting and design of the proposed commercial solar energy generation facility will be either:*
  - *(A) Unobtrusive and not detract from the natural features, open space and visual qualities of the area as viewed from communities, rural residential uses, and major roadways and highways*
  - *(8) The proposed commercial solar energy generation facility will be located in proximity to existing electrical infrastructure, such as transmission lines, utility corridors, and roads, so that:*
    - *(A) minimal ground disturbance and above ground infrastructure will be required to connect to the existing transmission grid, considering the location of the project site and the location and capacity of the transmission grid*
    - *(B) new electrical generation tie lines will be co-located on existing power poles whenever possible*

San Bernardino Countywide Plan: Lucerne Valley Community Action Guide (2020 Draft)

- ***Community Focus Statement A:*** *Maintain the rural character of the community*
  - *Action Statement A.1: Aspire to be a model renewable energy community with a principal focus on point-of-use, rooftop solar*
- ***Chapter 84.29, Renewable Energy Generation Facilities,*** *of the County of San Bernardino Development Code regulates solar energy generation facilities to protect the character and value of communities and neighborhoods and protect the natural and scenic values of the landscape*

4.1.3 Significance Criteria

This section identifies the criteria used to assess the Proposed Project's aesthetic/visual impacts and summarizes the impacts that would occur under each criterion. More detailed impact discussions are presented in Sections 4.1.4.1, *Stagecoach Solar Generation Plant*, 4.1.4.2, *Stagecoach Gen-tie Line*, and 4.1.4.3, *SCE Calcite Facilities*.

As contained in the State California Environmental Quality Act (CEQA) Guidelines, impacts to aesthetics are considered significant if the Proposed Project would:

(a) Have a substantial adverse effect on a scenic vista.

- A scenic vista is generally considered a specific viewpoint or viewing location (often an elevated overlook) that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas are frequently officially designated

by public agencies and are often signed and accessible to the public for the express purposes of viewing and sightseeing. Although there are expansive views of the study area from SR-247, Lucerne Valley Cutoff, and other local roads and scattered rural residences, there are no San Bernardino County–designated or community recognized scenic vistas in the study area. Therefore, this criterion is not separately evaluated. Impacts to views from SR-247, which is a State-Eligible and County-Designated Scenic Highway, are addressed in the discussion under Criterion (b) and the discussions of KOPs 1, 4, 5, and 6 under Criterion (c) below.

(b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

- Although SR-247 is a State-Eligible and County-Designated Scenic Highway, there are no State-Designated Scenic Highways in the study area. Therefore, the Proposed Project would not result in an aesthetic/visual impact under this criterion.

(c) In non-urbanized areas, substantially degrade the existing visual character or quality of the public views of the site and its surroundings. Public views are those that are experienced from publicly accessible vantage points.

- The Proposed Project would introduce visually prominent and highly contrasting energy infrastructure with its associated industrial character into the predominantly natural landscapes of North Lucerne Valley and the northern portion of Lucerne Valley, which are absent similar built features. The resulting aesthetic/visual impacts associated with the solar generation plant, gen-tie line, and SCE Calcite Facilities would be significant and unavoidable under this criterion. These impacts are discussed in more detail by specific KOP in Sections 4.1.4.1, 4.1.4.2, and 4.1.4.3 below.

(d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

- The Proposed Project would utilize night lighting during construction and operation, which could result in significant adverse night lighting visual effects given the general lack of any significant, existing night lighting at the Proposed Project sites. However, effective implementation of Mitigation Measure (MM) ALG-5 (Minimize night lighting at project facilities) would reduce the potentially significant impact to a level that would be less than significant.

An additional criterion considered in this analysis (not contained in the State CEQA Guidelines[12]) that could potentially lead to a determination of a significant visual impact is:

[12] The “State CEQA Guidelines” refers to California Code of Regulations, Title 14, Chapter 3.

- Proposed Project construction or the presence of Proposed Project components would result in an inconsistency with local regulations, plans, and standards applicable to the protection of visual resources

This impact is addressed in Section 4.11, *Land Use and Planning*, Impact LU-2.

4.1.4 Environmental Impact Analysis and Mitigation

This section discusses adverse aesthetic effects that would occur with implementation of the Proposed Project, including the direct and indirect effects of construction and the long-term presence of the Proposed Project (i.e., operation and maintenance [O&M] activities). This section also presents mitigation measures to avoid or reduce aesthetic effects of the Proposed Project.

Impact Assessment Methodology

An adverse aesthetic or visual effect typically occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) visually prominent natural or cultural features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual effect depends upon how noticeable the adverse change may be. The noticeability of a visual effect is a function of project features, context, and viewing conditions (angle of view, distance, primary viewing directions, and duration of view).

The factors considered in determining adverse effects on visual resources included: (1) scenic quality of the study area landscape; (2) available visual access and visibility, frequency, and duration that the landscape is viewed; (3) viewing conditions (distance, angle of observation, relative size or scale, spatial relationships, motion, light conditions, seasonable variability, and atmospheric conditions) and the degree to which the Proposed Project components would dominate the view of the observer; (4) resulting contrast (form, line, color, and texture) of the Proposed Project facilities or activities with existing landscape characteristics and expected vegetation recovery time; (5) the extent to which Proposed Project features or activities would block views of higher value landscape features; and (6) the level of public interest in the existing landscape characteristics and concern over potential changes.

Digital techniques were used to produce simulations of the Proposed Project (and substation alternative) as it would appear from several representative KOPs. The Proposed Project simulations assisted in the assessment of the contrast of the Proposed Project with existing landscape elements. Effects on visual resources within the study area could result from various activities including facility construction, establishment of

construction staging areas and access roads, and Proposed Project O&M or presence of the built facilities.

The effects on visual resources can be either direct or indirect. The impact discussions presented later in this section primarily address the direct effects on visual resources since visual resources effects tend to almost always be direct. Two exceptions include increased traffic on roadways beyond the study area during construction and perceptions of (visible) regional industrialization. Perceptions of regional industrialization are addressed under Section 4.1.5, *Cumulative Impacts*. Where distinctions can be made between direct and indirect effects, they are discussed under the Proposed Project phases of construction and O&M.

The assessment of environmental consequences utilized the VS-VC method under which overall visual change was determined at each representative KOP based on an assessment and equal weighting of Proposed Project-induced visual contrast, project dominance, and view blockage (or view impairment) and an evaluation of a visual simulation of the Proposed Project. Each of the key factors contributing to visual change is discussed below.

Visual Contrast describes the degree to which a project's visual characteristics or elements (consisting of form, line, color, and texture) differ from the same visual elements in the existing landscape. The degree of contrast ranges from Low to High. The presence of forms, lines, colors, and textures in the landscape similar to those of a project's indicates a landscape more capable of accepting those project characteristics than a landscape where those elements are absent.

Project Dominance is a measure of a feature's apparent size relative to other visible landscape features and the total field of view. A feature's dominance is affected by its relative location in the field of view and the distance between the viewer and the feature. The level of dominance ranges from Subordinate to Dominant.

View Blockage or ***Impairment*** describes the extent to which any previously visible landscape features are blocked from view, or views of those features are impaired as a result of a project's scale and/or position. Blockage of higher-quality landscape features by lower-quality project features causes adverse visual impacts. The degree of view blockage ranges from None to High.

Overall Visual Change is a concluding assessment as to the degree of change that would be caused by a project. Overall visual change is derived by combining the three equally weighted factors of visual contrast, project dominance, and view blockage and ranges from Low to High. In some cases, however, where view blockage is reduced by a project, overall visual change may be Improved.

Overall visual change is then considered within the context of the determined overall visual sensitivity of the existing landscape and viewing dynamics, and an impact significance conclusion is made per California Environmental Quality Act (CEQA) requirements (see Section 4.1.3 above). Table 4.1-1 illustrates the general interrelationship between visual sensitivity and visual change and is used as a consistency check between individual KOP evaluations. Actual parameter determinations (e.g., visual contrast, project dominance, and view blockage) are based on analyst experience and site-specific circumstances.

Table 4.1-1. General Guidance for Review of Adverse Impact Significance

Overall Visual Sensitivity	Overall Visual Change				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	Minor and Less than Significant[1]	Minor and Less than Significant	Less than Significant[2]	Less than Significant	Less than Significant
Low to Moderate	Minor and Less than Significant	Less than Significant	Less than Significant	Less than Significant	Potentially Significant[3]
Moderate	Less than Significant	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant
Moderate to High	Less than Significant	Less than Significant	Potentially Significant	Potentially Significant	Significant[4]
High	Less than Significant	Potentially Significant	Potentially Significant	Significant	Significant

[1] Minor and Less than Significant – Impacts are visible but may not be noticeable. To the extent they are noticed, they are perceived as negative but less than significant in the context of existing landscape characteristics and viewing opportunities.

[2] Less than Significant – Impacts are generally noticeable and perceived as negative but do not exceed environmental thresholds of significance—they are still considered less than significant in the context of existing landscape characteristics and viewing opportunities.

[3] Potentially Significant – Impacts are readily perceived as negative and may exceed environmental thresholds depending on project- and site-specific circumstances. Implementation of effective mitigation may reduce a potentially significant impact to a less than significant level.

[4] Significant – Impacts are readily perceived as negative and exceed environmental thresholds. Implementation of effective mitigation may reduce a significant impact to a less than significant level.

While the interrelationships presented in Table 4.1-1 are intended as guidance only, it is reasonable to conclude that lower visual sensitivity ratings paired with lower visual change ratings will generally correlate with lower degrees of impact significance when viewed in the field. Conversely, higher visual sensitivity ratings paired with higher visual change ratings will tend to result in higher degrees of visual impact.

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

The remainder of this section (4.1.4) presents a series of impact statements (including both project construction and O&M) followed by their respective impact discussions, relevant mitigation measures to avoid or reduce aesthetic/light and glare impacts, and the identification of any residual impacts.

The impacts of the Stagecoach Solar Generation Plant are presented in Section 4.1.4.1, while the Stagecoach Gen-tie Line and SCE Calcite Facilities are analyzed in Sections 4.1.4.2 and 4.1.4.3, respectively.

4.1.4.1 Impacts of Stagecoach Solar Generation Plant

Impact ALG-1: Introduction of visually discordant construction equipment, vehicles, materials, and workforce.

Construction of the Project would cause temporary adverse visual impacts (e.g., visual contrast) due to the presence of equipment, vehicles, materials, and workforce. **(Less than Significant with Mitigation)**

Impact Discussion

Proposed Project construction would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. Short-term (temporary) impacts are those that would not persist after the construction phase, generally including impacts that last for less than 2 years. These effects would occur at the solar generation, substation, battery storage, and ancillary facilities sites. Construction would involve the use of cranes, heavy construction and earth-moving equipment, temporary storage and office facilities, and temporary laydown/staging areas. An indirect effect from greatly increased vehicle traffic on roadways beyond the study area would also occur.

Construction activities would include site clearing and grading, assembly of panel arrays, erection of structures, and site cleanup and restoration. These activities would be visible from SR-247, Lucerne Valley Cutoff, the numerous OHV recreational access roads, and the scattered rural residences in the study area. Throughout the construction period, the industrial character of the activities would cause visual contrast and visual change, which would constitute adverse aesthetic effects when viewed by the general public. However, since the construction activities and equipment would be temporary in nature (lasting up to 18 months), they would not result in a substantial long-term visual effect. No mitigation specific to visual resources is available, but mitigation measures recommended in the air quality analysis (Section 4.2) and traffic analysis (Section 4.17) would reduce the severity

of the visibility of construction activities. With these mitigation measures and because of the temporary nature of construction, the resulting impact would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control (Section 4.2, *Air Quality*)

MM TRA-1: Construction Traffic Control Plan (Section 4.17, *Traffic and Transportation*)

Impact ALG-2: Creation of visual contrast due to vegetation removal.

Construction of the Project would introduce visual contrast as a result ground disturbance and vegetation removal, which could cause temporary to long-term, adverse visual impacts. **(Significant and Unavoidable)**

Impact Discussion

As described in Section 2.3.3.1, the Applicant proposes to use conventional grading throughout the project site, but grading would be minimized to the maximum extent possible. The potential minimization of grading would be beneficial to reducing the extent of the impact, but is not assured so this analysis assumes that the solar field would be fully graded. Areas of ground surface disturbance and vegetation removal (characterized by high contrasts in color, line, and texture) could remain visible from various vantage points for an extended period after the conclusion of construction activities, even where no permanent facilities are installed because revegetation of areas in the desert region is difficult and generally of limited success. However, the vast majority of the areas of ground disturbance would be occupied by permanent facilities, and since most foreground to middleground views of the disturbed areas would be at similar elevations (at grade), much of the contrast associated with unnatural vegetative patterns and/or lines would be screened from view by intervening vegetation.

The Applicant has committed to minimizing vegetation removal. In addition, MM BIO-1c (Minimization of Vegetation and Habitat Impacts) and MM BIO-1e (Revegetation) have goals of reducing habitat loss. However, many large-scale solar projects are constructed on fully graded sites even after these mitigation efforts. The longer-term visual contrast that would result would appear prominent from some viewing locations and cause Moderate to High levels of visual change, which would result in a significant aesthetic/visual impact under CEQA Significance Criterion (c) – degradation of existing visual character or quality. This would result in a significant and unavoidable impact.

Mitigation Measures

MM BIO-1c: Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*)

MM BIO-1e: Revegetation (Section 4.3, *Biological Resources*)

Residual Impacts

Depending on the scale and visibility of the impacted areas, effective implementation of the above mitigation measure may reduce the extent and severity of the aesthetic/visual impact. If the graded area is extensive and highly visible to the general public over an extended period of time, the aesthetic/visual impact would remain severe.

Impact ALG-3: Creation of visual contrast associated with the marking of natural features.

Construction of the Proposed Project would potentially introduce visual contrast due to the introduction of discordant paint or permanent discoloring agents if applied to rocks or vegetation to indicate survey or construction activity limits, which could cause temporary to long-term, adverse visual impacts. **(Less than Significant with Mitigation)**

Impact Discussion

Construction of the scale required for the Proposed Project may result in the use of paint or permanent discoloring agents that would be applied to rocks or vegetation to indicate survey or construction activity limits or to provide direction for construction activities. In some cases, such markings can result in long-term visible color contrast and substantial visual change, which could result in a significant aesthetic/visual impact under CEQA Significance Criterion (c), degradation of existing visual character or quality, if not successfully mitigated. However, MM BIO-1c (Minimization of Vegetation and Habitat Impacts) includes a prohibition of construction marking of natural features), which would prevent this aesthetic/visual impact from occurring. The impact after mitigation would be less than significant.

Mitigation Measures

MM BIO-1c: Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*)

Impact ALG-4: Creation of visual contrast associated with construction-generated fugitive dust, waste, and trash.

Construction of the Proposed Project could cause fugitive dust from grading and construction vehicles on graded surfaces and wind-blown trash and waste if improperly discarded, could cause temporary but substantial visual degradation of the site and surrounding area. **(Less than Significant with Mitigation)**

Impact Discussion

Grading of the solar field; substation, battery storage, and ancillary facilities; and access roads have the potential to generate dust clouds, creating visual contrast that can substantially degrade the quality of the landscape over an extended duration during construction. The resulting aesthetic/visual impact could be significant if not effectively mitigated. Implementation of MM AQ-1a (Fugitive Dust Control; Section 4.2, *Air Quality*) can reduce this impact to a level that would be less than significant from the perspective of visual resources.

During construction, there is the potential for trash and food-related waste to be discarded inappropriately at construction sites and then be transported by wind and/or animals across the landscape, resulting in additional visual contrast and degradation of landscape quality and character. Implementation of MM BIO-3a (Protect Wildlife Resources; Section 4.3, *Biological Resources*) can reduce this potentially significant aesthetic/visual impact to a level that would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control (Section 4.2, *Air Quality*)

MM BIO-3a: Protect Wildlife Resources (Section 4.3, *Biological Resources*)

Impact ALG-5: Creation of new sources of substantial light or glare such as nighttime illumination.

Nighttime illumination during construction and operation could cause temporary to long-term, adverse visual impacts. **(Less than Significant with Mitigation)**

Impact Discussion

It is anticipated that some construction activity could occasionally take place at night, which could result in substantial adverse night lighting visual effects (contrast) given the general lack of any significant night lighting at the Proposed Project sites. As described in Sections 2.2.2 and 2.2.2.6, the Applicant has committed to minimizing dark skies effects by using task lighting, and downward cast fixtures. However, without additional details defined, the light or glare impacts could remain significant.

Improperly controlled lighting could result in a significant aesthetic/visual impact under CEQA Significance Criterion (c), degradation of existing visual character or quality, and Criterion (d), create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, if not controlled properly. Similarly, nighttime illumination of Proposed Project facilities during the operational phase could cause substantial visual contrast given the general absence of light in the existing landscape. The resulting aesthetic/visual impact could be significant under the same CEQA criterion if not

properly mitigated. However, effective implementation of MM ALG-5 (Minimize Night Lighting at Project Facilities) would reduce the potentially significant impact to a level that would be less than significant.

Mitigation Measures

MM ALG-5: Minimize Night Lighting at Project Facilities. The Applicant shall avoid night lighting where possible and minimize its use under all circumstances. To ensure this, the Applicant shall implement the following requirements for both construction and operation:

- Illumination of the Project and its immediate vicinity shall be minimized
- Lamps and reflectors are to be fully shielded with sufficient cutoff angles such that they are not visible from beyond the construction site or facility including any off-site security buffer areas
- Lighting shall emphasize the use of low-pressure sodium (LPS) or amber light-emitting diode (LED) lighting
- Lighting shall not cause excessive reflected glare and shall not illuminate the nighttime sky, except for required Federal Aviation Administration (FAA) aircraft safety lighting (which, if required, shall be an on-demand, audio-visual warning system that is triggered by radar technology)
- Creation of sky glow caused by project lighting shall be avoided
- All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall be full cutoff fixtures
- All security lighting is to be motion activated only through the use of passive infrared sensors and controlled as specific zones such that only targeted areas are illuminated

Impact ALG-6: Long-term presence of the Project would result in landscape changes that degrade existing visual character or quality.

The long-term presence of the Proposed Project would introduce industrial character and visual contrast to a predominantly natural-appearing landscape, which could cause substantial visual degradation of the site. **(Significant and Unavoidable)**

Impact Discussion

Degradation of visual character or quality are the direct effects of Proposed Project implementation that result from the introduction of noticeable visual contrast relative to spatial characteristics, visual scale, form, line, color, and texture. Degradation also results from Proposed Project dominance and the blockage of views to higher value landscape features (e.g., mountains and ridgelines). Three representative KOPs were selected to

assess the impacts of the Proposed Project's solar generation plant on the existing visual character and scenic quality of the landscape. The results of these analyses are presented in the following paragraphs by KOP.

KOP 1 – Southbound SR-247. This viewpoint is representative of Proposed Project views from SR-247, which is a State-Eligible and County-Designated Scenic Highway. Figure 4.1-2a presents the existing view to the west from KOP 1, which captures much of North Lucerne Valley. Figure 4.1-2b presents a visual simulation of much of the area occupied by solar arrays, substation, battery storage area, administration buildings, and ancillary facilities.

As shown in the simulation, the Proposed Project would result in the introduction of visually prominent facilities into a predominantly natural-appearing, rural desert landscape. The arrays would be visible as light- to dark-gray (depending on panel orientation and viewing angle), areal masses on the valley floor. Due to the viewing distance and dispersed locations within the solar arrays, the power block facilities would appear as Subordinate features in the larger structure massing. In the context of the existing landscape, the solar generation plant would exhibit Moderate to High visual contrast, primarily arising from the expansive horizontal and geometric industrial forms and notably darker color. As a result, the Proposed Project would constitute a middleground, visually Co-dominant to Dominant feature in the landscape. The Proposed Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be Moderate to High. Combining the Moderate to High visual contrast, Co-dominant to Dominant structural prominence, and Moderate to High view blockage results in a Moderate to High degree of overall visual change, which in the context of the existing landscape's Moderate to High visual sensitivity, results in a visual effect that would be significant and unavoidable under CEQA Significance Criterion (c) degradation of existing visual character or quality. Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) is recommended as it would reduce the visual contrast associated with visually discordant structural features and industrial character, though not to a level that would be less than significant.

KOP 2 – Althouse Road. This viewpoint is representative of the scattered rural residential views in the immediate Proposed -Project vicinity north of Lucerne Valley Cutoff. Figure 4.1-3a presents the existing view to the west from KOP 2 on Althouse Road, approximately 0.2 miles east of Gazelle Road, which captures a southwestern portion of North Lucerne Valley. Figure 4.1-3b presents a visual simulation of a portion of the solar arrays along with the substation, administration buildings, and battery storage area.

This image presents the **Existing View** to the west from **KOP 1** on southbound State Route 247 in Lucerne Valley, approximately 3.5 miles east of the proposed Project site in North Lucerne Valley. This view captures much of North Lucerne Valley, which is topographically flat and vegetated with low-growing shrubs. Sidewinder Mountain (left side of image) and the more distant Stoddard Mountain (center of image) provide features of visual interest though are partially obscured by smoke from wild fires.	**KOP 1** **SR 247 - Southbound** **Existing View**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-2a**

This image presents a **Visual Simulation** of the proposed Project from **KOP 1** on southbound State Route 247 in Lucerne Valley, approximately 3.5 miles east of the proposed Project site in North Lucerne Valley. This simulation illustrates the introduction of a visually prominent energy facility with its associated industrial character and visual contrast, into the predominantly natural landscape of North Lucerne Valley.	**KOP 1** **SR 247 - Southbound** **Visual Simulation**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-2b**

This image presents the **Existing View** to the west from **KOP 2** on Althouse Road, approximately 0.2 mile east of Gazelle Road, in North Lucerne Valley. This view captures a portion of the landscape in the vicinity of Lucerne Valley Cutoff. Sidewinder Mountain defines the southern extent of North Lucerne Valley and provides a landscape feature of visual interest.	**KOP 2** **Althouse Road** **Existing View**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-3a**

This image presents a **Visual Simulation** of a portion of the proposed solar field that would be located on the south side of Lucerne Valley Cutoff, as viewed from **KOP 2** on **Althouse Road,** approximately 0.2 mile east of Gazelle Road and north of Lucerne Valley Cutoff. This simulation illustrates the introduction of a visually dominant field of solar panel arrays, substation, administration buildings, and battery storage facilities, exhibiting industrial character and visual contrast adjacent to Lucerne Valley Cutoff.	**KOP 2** **Althouse Road** **Visual Simulation**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-3b**

As shown in the simulation, the Proposed Project would result in the introduction of visually prominent facilities into a predominantly natural-appearing, rural desert landscape and open space. The arrays and other project structures would be prominently visible as geometrically simple to complex industrial structures along the valley floor. In the context of the existing landscape, the solar generation plant would exhibit High visual contrast. As a result, the Proposed Project would constitute a foreground to middleground, visually Co-dominant to Dominant feature in the landscape. The Proposed Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be Moderate to High. Combining the High visual contrast, Co-dominant to Dominant structural prominence, and Moderate to High view blockage results in an overall Moderate to High degree of visual change, which in the context of the existing landscape's Moderate to High visual sensitivity, results in a visual effect that would be significant and unavoidable under CEQA Significance Criterion (c) degradation of existing visual character- or quality. Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) is recommended as it would reduce the visual contrast associated with visually discordant structural features and industrial character, though not to a level that would be less than significant.

KOP 3 – Lucerne Valley Cutoff – North. This viewpoint is representative of Proposed Project views from the upper (northwestern) portion of North Lucerne Valley. Figure 4.1-4a presents the existing view to the southeast and down valley from KOP 3, at a popular rock outcrop adjacent to Lucerne Valley Cutoff. Figure 4.14-b presents a visual simulation of much of the central valley area occupied by the solar arrays and ancillary facilities (visually indistinct at this viewing distance).

As shown in the simulation, the Proposed Project would result in the introduction of visually prominent facilities into a predominantly natural-appearing, rural desert landscape. The arrays would be visible as light- to dark-gray (depending on panel orientation and viewing angle), areal masses on the valley floor. In the context of the existing landscape, the solar generation plant would exhibit Moderate to High visual contrast, primarily arising from the expansive horizontal linear forms and notably darker color. As a result, the Proposed Project would constitute a middleground, visually Co-dominant to Dominant feature in the landscape. The Proposed Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., valley floor and vegetation) would be Moderate to High. Combining the Moderate to High visual contrast, Co-dominant to Dominant structural prominence, and Moderate to High view blockage results in an overall Moderate to High degree of visual change, which in the context of the existing landscape's Moderate to High visual sensitivity, the resulting visual effect would be significant and unavoidable under CEQA Significance Criterion (c), degradation of existing visual character or quality.

This image presents the **Existing View** to the southeast, from **KOP 3** at the **Rock Outcrop** adjacent to **Lucerne Valley Cutoff,** approximately two miles northwest of the project site. This slightly elevated perspective encompasses much of the wide-open bowl comprising North Lucerne Valley. There are few developed features in the valley. Bordering (eastern extent of Sidewinder Mountain in right side of image) and more distant mountain ranges are partially obscured by smoke from wildfires.	**KOP 3** **Lucerne Valley Cutoff - North** **Existing View**	**Aurora Solar Project EIR** **Visual Resources** **Figure 4.1-4a**

This image presents a **Visual Simulation** of a portion of the Proposed Project extending north and south of Lucerne Valley Cutoff, as viewed from **KOP 3** at the **Rock Outcrop,** adjacent to **Lucerne Valley Cutoff.** This simulation illustrates the introduction of a visually dominant solar energy facility into the relatively undeveloped North Lucerne Valley. The solar field, storage facility, and ancillary facilities would introduce industrial character and visual contrast into a landscape presently absent these visual characteristics.	**KOP 3** **Lucerne Valley Cutoff - North** **Visual Simulation**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-4b**

Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) as well as MM BIO-1c (Minimization of Vegetation and Habitat Impacts) and MM BIO-1e (Revegetation) are recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character, though not to a level that would be less than significant.

Mitigation Measures

MM ALG-6: Surface Treatment and Design of Project Structures and Buildings. To the extent commercially feasible, the Applicant shall treat the surfaces of all non-temporary large Project structures and buildings visible to the public and all gen-tie structures such that: (a) their colors minimize visual intrusion and contrast by blending with (matching) the existing characteristic landscape colors; (b) their colors and finishes do not create excessive glare; and (c) their colors and finishes are consistent with local policies and ordinances. Gen-tie Line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. The Applicant shall implement the following requirements:

- Carefully consider the selection of color(s) and finishes based on the characteristic landscape. Colors will be field tested using the actual distances from the KOPs to the proposed structures, using the proposed colors painted on representative surfaces.
- Color treatment shall be applied to all major Project structures and buildings; the gen-tie line towers and/or poles; and walls or fencing
- Develop a procedure to ensure proper color treatment maintenance for the life of the Project
- Minimize the number of structures and combine different activities in one structure, where possible. Use natural, self-weathering materials and chemical treatments on surfaces to reduce color contrast. Bury all or part of structures to the extent practical. Use natural appearing forms to complement the characteristic landscape. Screen the structure from view by using natural landforms and vegetation. Reduce the line contrast created by straight edges.

MM BIO-1c: Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*)

MM BIO-1e: Revegetation (Section 4.3, *Biological Resources)*

Residual Impacts

Even with effective implementation of the above mitigation measures, the solar generation plant would be highly visible and inconsistent with the predominantly natural existing setting.

4.1.4.2 Impacts of Stagecoach Gen-tie Line

Impacts ALG-1 through ALG-5 would be the same for the gen-tie line as discussed above in Section 4.1.4.1 for the Stagecoach Solar Generation Plant, and the reader is referred to those discussions above. Two representative KOPs (4 and 5) were selected to assess the impacts of the proposed gen-tie line on the existing visual character and scenic quality of the landscape; these impacts are evaluated in Impact ALG-6. The results of these analyses are presented in the following paragraphs.

Impact ALG-6: Long-term presence of the Stagecoach Gen-tie Line would result in landscape changes that degrade existing visual character or quality.

The long-term presence of the gen-tie line would introduce industrial character and visual contrast to a predominantly natural-appearing landscape, which would cause substantial visual degradation of the site. **(Significant and Unavoidable)**

KOP 4 – Northbound SR-247. This viewpoint is representative of the Proposed Project gen-tie views from SR-247, which is a State-Eligible and County-Designated Scenic Highway. Figure 4.1-5a presents the existing view to the north-northeast from KOP 4, which captures a northern portion of Lucerne Valley. Figure 4.1-5b presents a visual simulation of the Proposed Project gen-tie line as it converges on, and then spans, SR-247.

As shown in the simulation, the Proposed Project would result in the introduction of a visually prominent electric transmission line with its associated industrial character into the predominantly natural desert landscape of the northern Lucerne Valley, which is absent similar features. The gen-tie line would be visible as a sequence of light- to medium-gray (depending on sun orientation and viewing angle), vertical, linear features interconnected with curvilinear conductors. In the context of the existing landscape, which is absent any built structures, the gen-tie line would exhibit Moderate to High visual contrast, which becomes more noticeable as travelers on SR-247 approach the span. The foreground to middleground gen-tie facility would appear visually Co-dominant with the background landforms and would noticeably impair currently unobstructed views of Stoddard Ridge (west of SR-247) and the Ord Mountains (east of SR-247).

The Proposed Project would attract the attention of the casual observer, and view blockage of higher value landscape features (e.g., background ridges and mountains, valley floor, and sky [where skylining occurs]) would be Moderate to High. Combining the Moderate to High visual contrast, Co-dominant structural prominence, and Moderate to High view blockage results in an overall Moderate to High degree of visual change, which in the context of the existing landscape's Moderate to High visual sensitivity results in a visual effect that would be significant and unavoidable under CEQA Significance Criterion (c), degradation of existing visual character or quality.

This image presents the **Existing View** to the north-northeast from **KOP 4** on northbound State Route 247 in Lucerne Valley, approximately 0.4 mile north of the intersection with Lucerne Valley Cutoff. This view captures a northern portion of Lucerne Valley, backdropped by the rugged Stoddard Ridge (to the left) and Ord Mountains (to the right). The valley is predominantly natural in appearance and the background ridges and mountains provide features of visual interest that contrast with the flat valley floor.	**KOP 4** **SR 247 - Northbound** **Existing View**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-5a**

This image presents a **Visual Simulation** of the **Gen-Tie Line** from **KOP 4** on northbound State Route 247 in Lucerne Valley, approximately 0.4 mile north of the intersection with Lucerne Valley Cutoff. This simulation illustrates the introduction of a visually prominent electric transmission line with its associated industrial character and visual contrast, into the predominantly natural landscape of the northern Lucerne Valley, which is absent similar features.	**KOP 4** **SR 247 - Northbound** **Visual Simulation**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-5b**

Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) is recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character, though not to a level that would be less than significant.

KOP 5 – Algoman Avenue. This viewpoint is representative of the Proposed Project gen-tie views to the east from the scattered rural residences in the vicinity of Algoman Avenue and Spinel Street in Lucerne Valley. Figure 4.1-6a presents the existing view to the east from KOP 5, which captures a central portion of Lucerne Valley where an existing wood-pole utility line is visible as it connects to the scattered rural residences on the east (and west) side of SR-247. Figure 4.1-6b presents a visual simulation of the Proposed Project gen-tie line as it follows a circuitous path along various property boundaries.

As shown in the simulation, the Proposed Project would result in the introduction of a visually prominent electric transmission line with its associated industrial character into the predominantly natural to rural residential desert landscape of Lucerne Valley. Because of the circuitous path that the gen-tie line would follow, numerous vertical poles would be visible within the frame of view, adding to the apparent structural visual contrast and view blockage of the Ord Mountains in the background. The gen-tie line would be visible as a sequence of light- to medium-gray (depending on sun orientation and viewing angle), vertical, linear features interconnected with curvilinear conductors. Although there is an existing wood-pole utility line that exhibits similar structural features (linear form, vertical line), the rough-hewn wood poles do not look out of place in the rural landscape and do not impart an industrial character as does the proposed gen-tie line.

In the context of the existing landscape, the gen-tie line would exhibit Moderate visual contrast, which becomes more noticeable when the structures appear above the horizon line of the background mountains. The foreground gen-tie facility would appear visually Co-dominant with the background landforms and existing utility line and would noticeably impair views of the background Ord Mountains.

The Proposed Project's numerous structures would attract the attention of the casual observer and local residents, and view blockage of higher value landscape features (e.g., background ridges and mountains, valley floor, and sky [where skylining occurs]) would be Moderate to High. Combining the Moderate visual contrast, Co-dominant structural prominence, and Moderate to High view blockage results in an overall Moderate degree of visual change, which in the context of the existing landscape's Moderate to High visual sensitivity, results in a visual effect that would be adverse but less than significant under CEQA Significance Criterion (c), degradation of existing visual character or quality. This conclusion is substantially affected by the presence of the existing utility line that exhibits some structural characteristics similar to the proposed gen-tie line. Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) is recommended as they would reduce the visual contrast associated with visually discordant structural features and industrial character.

This image presents the **Existing View** to the east from **KOP 5** on Algoman Avenue, north of Brucite Street, in Lucerne Valley. This view captures the portion of the Valley where vertical (wood) utility poles are visible in the rural landscape east of SR 247. The flat valley landscape, encompassing relatively nondescript vegetation, is backdropped by the rugged southern extension of the Ord Mountains, which provide features of visual interest in contrast with the flat valley floor.	**KOP 5** **Algoman Avenue** **Existing View**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-6a**

This image presents a **Visual Simulation** of the **Gen-Tie Line** from **KOP 5** on Algoman Avenue, north of Brucite Street, in Lucerne Valley. This simulation illustrates the introduction of a visually prominent electric transmission line with its associated industrial character and structural contrast, into the predominantly natural to rural residential landscape of Lucerne Valley. Although there is an existing utility line with its vertical structures, the rough-hewn wood poles do not look out of place in this rural landscape.	**KOP 5** **Algoman Avenue** **Visual Simulation**	**Stagecoach Solar Project EIR** **Visual Resources** **Figure 4.1-6b**

Mitigation Measures

MM ALG-6: Surface Treatment of Project Structures and Buildings

Residual Impacts

With effective implementation of mitigation, the aesthetic/visual impacts of the Stagecoach Gen-tie Line experienced in the vicinity of KOP 4 and KOP 5 would be reduced in severity, but the gen-tie line would remain highly visible in a setting where no utility structures of this scale are present.

4.1.4.3 Impacts of SCE Calcite Facilities

Following is a discussion of Impacts ALG-1 and ALG-3 through ALG-6, as they apply to the SCE Calcite Facilities. Impact ALG-2 (Creation of visual contrast due to vegetation removal) does not apply at the SCE Calcite Substation due to the wall that SCE proposes to construct to enclose the substation.

Impact ALG-1: Introduction of visually discordant construction equipment, vehicles, materials, and workforce.

Construction of the SCE Calcite Facilities would cause temporary adverse visual impacts (e.g., visual contrast) due to the presence of equipment, vehicles, materials, and workforce. **(Less than Significant with Mitigation)**

Impact Discussion

Construction of the SCE Calcite Facilities would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. Construction would involve the use of cranes, heavy construction and earth-moving equipment, temporary storage and office facilities, and temporary laydown/staging areas. An indirect effect from increased vehicle traffic on roadways beyond the study area would also occur.

Construction activities would include site clearing and grading, installation of substation equipment and walls, installation of electric distribution lines, interconnection of the new substation with the existing transmission corridor, and site cleanup and restoration. These activities would be visible from SR-247 and the scattered rural residences in the area. Throughout the construction period, the industrial character of the activities would cause visual contrast and visual change, which would constitute adverse aesthetic effects when viewed by the general public. However, since the construction activities and equipment would be temporary in nature and constrained to the immediate area of the proposed SCE Calcite Substation, they would not result in a substantial long-term visual effect. No mitigation specific to visual resources is available, but measures recommended in the air quality analysis (Section 4.2) and traffic analysis (Section 4.17) would reduce the severity

of the visibility of construction activities. With these mitigation measures and because of the temporary nature of construction, the resulting impact would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control (Section 4.2, *Air Quality*)

MM TRA-1: Construction Traffic Control Plan (Section 4.17, *Traffic and Transportation*)

Impact ALG-2: Creation of visual contrast due to vegetation removal.

Construction of the SCE Calcite Substation would introduce visual contrast as a result ground disturbance and vegetation removal, which could cause temporary to long-term, adverse visual impacts. **(No Impact)**

Impact Discussion

The grading and vegetation removal required for the SCE Calcite Substation would occur primarily within the substation walls and would not be visible after construction is completed.

Mitigation Measures

No mitigation would be required.

Impact ALG-3: Creation of visual contrast associated with the marking of natural features.

Construction of the SCE Calcite Facilities would potentially introduce visual contrast due to the introduction of discordant paint or permanent discoloring agents if applied to rocks or vegetation to indicate survey or construction activity limits, which could cause temporary to long-term, adverse visual impacts. **(Less than Significant with Mitigation)**

Impact Discussion

Construction of the scale required for the SCE Calcite Facilities may result in the use of paint or permanent discoloring agents that would be applied to rocks or vegetation to indicate survey or construction activity limits or to provide direction for construction activities. In some cases, such markings can result in long-term visible color contrast and substantial visual change, which could result in a significant aesthetic/visual impact under CEQA Significance Criterion (c), degradation of existing visual character or quality, if not successfully mitigated. However, effective implementation of MM BIO-1c (Minimization of Vegetation and Habitat Impacts) can prevent this aesthetic/visual impact from occurring, ensuring that the impact is less than significant.

Mitigation Measures

MM BIO-1c: Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*)

Impact ALG-4: Creation of visual contrast associated with construction-generated fugitive dust, waste, and trash.

Construction of the SCE Calcite Facilities could cause fugitive dust from grading activities and wind-blown trash and waste if improperly discarded, resulting in temporary but substantial visual degradation of the site and surrounding area. **(Less than Significant with Mitigation)**

Impact Discussion

Grading activities for the construction of the SCE Calcite Substation, access roads, and drainage facilities have the potential to generate dust clouds, creating visual contrast that can substantially degrade the quality of the landscape over an extended duration during construction. The resulting aesthetic/visual impact could be significant if not effectively mitigated. Implementation of MM AQ-1a (Fugitive Dust Control) can reduce this impact to a level that would be less than significant. Also, during construction, there is the potential for trash and food-related waste to be discarded inappropriately at construction sites and then be transported by wind and/or animals across the landscape, resulting in additional visual contrast and degradation of landscape quality and character. Implementation of MM BIO-3a (Protect Wildlife Resources) can reduce this potentially significant aesthetic/visual impact to a level that would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control (Section 4.2, *Air Quality*)

MM BIO-3a: Protect Wildlife Resources (Section 4.3, *Biological Resources*)

Impact ALG-5: Creation of new sources of substantial light or glare such as nighttime illumination.

Nighttime illumination during construction and operation could cause temporary to long-term, adverse visual impacts. **(Less than Significant with Mitigation)**

Impact Discussion

It is anticipated that some construction activity could occasionally take place at night, which could result in substantial adverse night lighting visual effects (contrast) given the general lack of any significant night lighting at the substation site. The associated visual contrast could result in a significant aesthetic/visual impact under CEQA Significance Criterion (c), degradation of existing visual character or quality, and Criterion (d), create a

new source of substantial light or glare that would adversely affect day or nighttime views in the area, if not controlled properly.

Similarly, nighttime illumination of SCE Calcite Substation facilities during the operational phase could cause substantial visual contrast given the general absence of light in the existing landscape. The resulting aesthetic/visual impact could be significant under the same CEQA criterion if not properly mitigated. However, effective implementation of MM ALG-5 (Minimize Night Lighting at Project Facilities), as described in Section 4.1.4.1 for the Stagecoach Solar Generation Plant, would reduce the potentially significant impact to a level that would be less than significant.

Mitigation Measures

MM ALG-5: Minimize Night Lighting at Project Facilities.

Impact ALG-6: Long-term presence of the Project would result in landscape changes that degrade existing visual character or quality.

The long-term presence of the Proposed Project would introduce industrial character and visual contrast to a predominantly natural-appearing landscape, which could cause substantial visual degradation of the site. **(Significant and Unavoidable)**

Impact Discussion

One representative viewpoint on SR-247 (KOP 6) was selected to assess the impacts of the proposed substation location on the existing visual character and scenic quality of the landscape (Impact ALG-6). The results of this analysis are presented in the following paragraphs.

KOP 6 – SCE Calcite Facilities. This viewpoint is representative of the views of the Proposed SCE Calcite Facilities site located adjacent and to the west of SR-247 in the vicinity of Haynes Road. Figure 4.1-7a presents the existing view to the south-southwest from KOP 6, approximately 0.84 miles north of the intersection with Haynes Road. This view captures a portion of Lucerne Valley east of the Granite Mountains and north of an existing SCE transmission line corridor, which passes northeast to southwest and is visible in the center of the image. Beyond the valley is the prominent horizontal to angular landform of the San Bernardino Mountains. Figure 4.1-7b presents a visual simulation of the SCE Calcite Substation immediately to the west of SR-247. As shown in the simulation, the Proposed Project would result in the introduction of a visually prominent and structurally complex electric transmission facility with its associated industrial character and structural contrast into the predominantly natural desert landscape of the central portion of Lucerne Valley. The notable exception is the existing high-voltage electric transmission lines. The SCE Calcite Facilities would connect to the Lugo-Pisgah No. 1 line, which is the southernmost transmission facility in the corridor, via a series of interconnect poles.

This panoramic image presents the **Existing View** to the south-southwest from **KOP 6** on southbound State Route 247, approximately 0.84 mile north of the intersection with Haynes Road. This view across Lucerne Valley captures the proposed and alternative locations for the **SCE Calcite Substation,** east of the Granite Mountains and north of an existing SCE transmission line corridor, which passes northeast to southwest and is visible in the center of the image. The San Bernardino Mountains, which are prominently visible in the distance, define the southern boundary of Lucerne Valley and provide visual interest. The vegetation of the flat valley floor is relatively nondescript, consisting of short grasses and shrubs that exhibit subdued coloration.

KOP 6
SCE Calcite Facilities
Existing View

Stagecoach Solar Project EIR
Visual Resources
Figure 4.1-7a

This panoramic image presents a **Visual Simulation** of the **Proposed SCE Calcite Substation** from **KOP 6** on southbound State Route 247, approximately 0.84 mile north of the intersection with Haynes Road. This simulation illustrates the introduction of a visually prominent electric utility facility with its associated complex industrial character and visual contrast, into the predominantly natural landscape of this central portion of Lucerne Valley. The notable exception is the existing high-voltage electric transmission corridor that passes immediately south of the substation site. The SCE Calcite Substation would connect to the Lugo-Pisgah No. 1 line, which is the southern-most transmission facility in the corridor. Although the existing transmission corridor establishes a prominent industrial feature in the landscape, the concentration of industrial features comprising the substation would exacerbate the adverse visual contrast already present.

KOP 6
SCE Calcite Facilities - Proposed
Visual Simulation

Stagecoach Solar Project EIR
Visual Resources
Figure 4.1-7b

Although the existing transmission corridor establishes a prominent industrial feature in the landscape, the “transparent” nature of the corridor’s lattice structures helps to lessen the overall structural prominence. The concentration of industrial features comprising the proposed substation would exacerbate the adverse visual contrast already present.

In the context of the existing landscape, the substation would exhibit Moderate to High visual contrast. The foreground substation would appear visually Co-dominant with the valley floor, background landforms, and existing transmission line facilities and would noticeably impair views of the background valley floor and San Bernardino Mountains. The structurally complex facility would attract the attention of the casual observer on SR-247, and view blockage of higher value landscape features (e.g., background valley floor and mountains) would be Moderate to High. Combining the Moderate to High visual contrast, Co-dominant structural prominence, and Moderate to High view blockage results in an overall Moderate to High degree of visual change, which in the context of the existing landscape’s High visual sensitivity, results in a visual effect that would be Significant and Unavoidable under CEQA Significance Criterion (c), degradation of existing visual character or quality. Implementation of MM ALG-6 (Surface Treatment and Design of Project Structures and Buildings) is recommended as it would reduce the visual contrast associated with visually discordant structural features and industrial character, though not to a level that would be less than significant.

Mitigation Measures

MM ALG-6: Surface Treatment and Design of Project Structures and Buildings

Residual Impacts

With effective implementation of the above mitigation measures the aesthetic/visual impacts experienced in the vicinity of KOP 6 on southbound SR-247 would be reduced for both the Proposed and Alternative SCE Calcite Facilities but would remain significant and unavoidable.

4.1.5 Cumulative Impacts

4.1.5.1 Geographic Scope

The geographic scope of the cumulative effects analysis for aesthetics consists of the SR-247 corridor, North Lucerne Valley (vicinity of Lucerne Valley Cutoff between Stoddard Ridge and Sidewinder Mountain), the northern and central portions of Lucerne Valley, and the Proposed Project-facing slopes and ridges of the surrounding mountains. The geographic scope is based primarily on the natural boundaries of the affected resource where direct effects would occur (i.e., shared viewsheds). Secondarily, the geographic scope also considers the indirect effect of the perceived industrialization of the SR-247 corridor, which is associated with the proliferation of energy facilities across the landscape visible to travelers on SR-247. Therefore, for the purposes of this analysis, the area of

direct effect generally includes North Lucerne Valley (and facing slopes) and Lucerne Valley (and facing slopes) extending north from the intersection of SR-247 and Northside Road to Stoddard Ridge. The area of indirect effect extends north along SR-247 from the intersection with Old Woman Springs Road to Northside Road and from Stoddard Ridge to the City of Barstow.

Existing and probable foreseeable future actions making up the cumulative scenario for Aesthetics/Light and Glare are listed below and in Table 3-1, and mapped in Figure 3-1 in Section 3.0:

(1) Sienna Solar North, South, East, and West

(2) Ord Mountain Solar LLC

(3) Calcite Solar I – Lendlease Energy Development, LLC

(4) SCE Eldorado Lugo Mohave Capacitor Project (proposed)

(5) SCE Pisgah-Lugo Transmission Corridor (existing)

(6) Monastery, P201700152

These actions include five energy related projects and one monastery residential project. These projects would all be within the field of view of at least portions of the Proposed Project and are expected to result in cumulative visual impacts for travelers along SR-247, travelers on Lucerne Valley Cutoff (monastery), and residents and dispersed recreational users in the surrounding areas.

An additional regional project would not be within the same field of view as the Proposed Project but would contribute to the indirect cumulative sense of industrialization along the SR-247 corridor: the Los Angeles Department of Water and Power (LADWP) Transmission Corridor that crosses SR-247 near BLM's Stoddard Wells OHV area (about 12 miles north of the intersection of SR-247 and Lucerne Valley Cutoff).

4.1.5.2 Cumulative Impact Analysis

Impacts resulting from construction, O&M, and decommissioning of the Proposed Project would result in a cumulative effect on visual resources with other past, present, or reasonably foreseeable future actions.

<u>Impacts ALG-1, ALG-3, and ALG-4: Construction Equipment and Markings</u>

These are impacts that would occur primarily during the 18-month construction timeframe. They would be reduced in severity with mitigation measures for protection of vegetation and habitat, control of dust and control of construction traffic. The Project's contribution to these construction effects would be short-term. With these measures, impacts would not contribute significantly to cumulative aesthetics impacts.

Impacts ALG-5: New Sources of Nighttime Light and Glare

The Proposed Project and the other proposed solar projects would create new sources of nighttime illumination during both the construction and operational phases. This lighting could cause substantial visual contrast given the general absence of light in the existing landscape. Without proper mitigation, the aesthetic/visual impact of the Proposed Project would contribute to a significant cumulative effect in the Lucerne Valley area. However, effective implementation of MM ALG-5 (Minimize Night Lighting at Project Facilities) would reduce the Project's contribution.

Impacts ALG-2 and ALG-6: Long-term Presence of the Project Would Degrade Existing Visual Character

Although there are a few existing structures visible along the SR-247 corridor (transmission lines, wood-pole utility lines, rural residences, and 4-wheel drive tracks), the grand scale of the open desert panoramas impart an overall general impression of a relatively unimpaired, isolated desert landscape. The cumulative scenario includes several large-scale solar generation plants with gen-tie lines whose scale and industrial character would have adverse cumulative effects. If all the projects were implemented, they would substantially degrade the visual character and general scenic appeal of the existing landscape visible from SR-247, a State-Eligible and County-Designated Scenic Highway, as well as from several rural residences. The result would be the conversion of a relatively undeveloped desert landscape into one with an industrialized appearance.

Therefore, the Proposed Project, including the SCE Calcite Facilities, in combination with the six local cumulative projects and one regional project, would result in significant cumulative visual impacts when viewed by sensitive viewing populations along SR-247, from nearby residences, and in the surrounding mountains and OHV areas. Impacts would result from the introduction of substantial visual contrast associated with discordant geometric patterns in the landscape; large-scale, built facilities with prominent industrial character; un-natural lines of demarcation in the valley floor landscape; inconsistent color contrasts; and visible night lighting within North Lucerne Valley and the broader Lucerne Valley. For many travelers along SR-247, the scenic experience would be substantially degraded due to the perceived "industrialization" of the landscape.

4.1.6 Mitigation Measure Summary

Table 4.1-2 summarizes the mitigation measures identified in this EIR to reduce or avoid potentially significant impacts to Aesthetics/Light and Glare.

Table 4.1-2. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact ALG-1: Introduction of visually discordant construction equipment, vehicles, materials, and workforce	**MM AQ-1a**: Fugitive Dust Control (Section 4.2, *Air Quality*) **MM TRA-1**: Construction Traffic Control Plan (Section 4.17, *Traffic and Transportation*)
Impact ALG-2: Creation of visual contrast due to vegetation removal *[Impact and mitigation are not applicable to SCE Calcite Facilities]*	**MM BIO-1c:** Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*) **MM BIO-1e:** Revegetation (Section 4.3, *Biological Resources*)
Impact ALG-3: Creation of visual contrast associated with the marking of natural features	**MM BIO-1c:** Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*)
Impact ALG-4: Creation of visual contrast associated with fugitive dust, waste, and trash	**MM AQ-1a:** Fugitive Dust Control (Section 4.2, *Air Quality*) **MM BIO-3a:** Protect Wildlife Resources (Section 4.3, *Biological Resources*)
Impact ALG-5: Creation of new sources of substantial light or glare such as nighttime illumination	**MM ALG-5:** Minimize Night Lighting at Project Facilities
Impact ALG-6: Long-term presence of the Project would result in landscape changes that degrade existing visual character or quality	**MM ALG-6:** Surface Treatment and Design of Project Structures and Buildings **MM BIO-1c:** Minimization of Vegetation and Habitat Impacts (Section 4.3, *Biological Resources*) – *[Applies to Stagecoach Solar Generation Plant only]* **MM BIO-1e:** Revegetation (Section 4.3, *Biological Resources*) – *[Applies to Stagecoach Solar Generation Plant only]*

4.2 AIR QUALITY

This section describes the air quality resources for the Proposed Project vicinity, evaluates the type and significance of air quality impacts that may occur as a result of the Proposed Project, and identifies measures to avoid or substantially lessen any impacts found to be potentially significant. The section discusses the rules that are in place to prevent visible emissions, nuisances, and fugitive dust. Sensitive receptors are also discussed in this section.

Issues raised during scoping related to Air Quality included concerns about dust control and the connection between fugitive dust and dust suppression techniques. Commenters also expressed concerns about the need for nearby monitoring for baseline air quality data.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system

4.2.1 Environmental Setting

The Proposed Project would be located within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD), in an unincorporated area of San Bernardino County. The Proposed Project site is within the Western Mojave Desert portion of the Mojave Desert Air Basin. State Route 247 (SR-247, or Barstow Road) is approximately 4 miles to the east and provides the primary access to the area. The surrounding land uses in the vicinity of the Proposed Project site and along the routes that access the site are primarily vacant with intermittent rural residences.

The following description of the environmental setting applies to the Stagecoach Solar Generation Plant, the Stagecoach Gen-tie Line, (collectively, the Stagecoach Facilities) and the SCE Calcite Facilities.

Topography, Meteorology, and Climate

The Mojave Desert Air Basin encompasses mountain ranges interspersed with long broad valleys and dry lake beds. Prevailing winds in the Mojave Desert Air Basin are out of the west and southwest. These prevailing winds are due to the proximity of the air basin to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north and the San Bernardino Mountains to the southwest. Air masses pushed onshore in southern California by differential heating are channeled through the air basin (MDAQMD 2016). The climate at the site is typical of the Mojave Desert with extreme daily temperature changes, low annual precipitation, strong seasonal winds, and mostly clear skies.

Criteria Air Pollutants

In accordance with the state and federal clean air acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), and lead (Pb). These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health-based criteria as the scientific basis for setting permissible levels. Compared with California's urban centers and sheltered inland valleys, the Mojave Desert Air Basin experiences relatively low concentrations of most pollutants, that routinely occur at levels below the standards.

Toxic Air Contaminants

Toxic air contaminants (TACs) collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated using a risk-based approach to determine which types of sources and which facilities warrant specific emissions controls as well as the degree of control.

The main TAC of concern for the Proposed Project would be diesel particulate matter (DPM), which is emitted from on-road vehicles and off-road equipment. Diesel exhaust is a complex mixture of thousands of gases and fine particles emitted by a diesel-fueled

internal combustion engine. The California Air Resource Board (CARB) identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans. Diesel fuel standards, retiring or retrofitting older (in-use) diesel engines, and requiring particulate filters on newly manufactured engines are among the strategies available to control DPM emissions.

Local Air Quality Conditions

The determination of whether a region's air quality is healthful or unhealthful is made by comparing contaminant levels in ambient air samples to the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). Ambient air concentrations are monitored at various locations throughout California's air basins and used by both the California Air Resources Board (CARB) and U.S. Environmental Protection Agency (USEPA) to designate an area's attainment status with respect to the CAAQS and NAAQS, respectively, for criteria air pollutants. The purpose of these designations is to identify areas with air quality problems and thereby initiate planning efforts for improvement. The most recent attainment designations for criteria air pollutants in the Proposed Project area portion of the Mojave Desert Air Basin appear in Table 4.2-1.

Table 4.2-1. Attainment Status Designations for the Project Area

Criteria Air Pollutants	Federal Designation	State Designation
Ozone	Nonattainment (Severe)	Nonattainment (Moderate)
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified
Sulfur Dioxide (SO_2)	Unclassified/Attainment	Attainment
PM10 (Inhalable Particulate Matter)	Nonattainment (Moderate)	Nonattainment
PM2.5 (Fine Particulate Matter)	Unclassified/Attainment	Unclassified
Lead	Unclassified/Attainment	Attainment
Sulfates	No Federal Standard	Attainment

Source: MDAQMD 2016.
Acronyms: CO = carbon monoxide, NO_2 = nitrogen dioxide, PM2.5 = particulate matter less than 2.5 microns in diameter, PM10 = particulate matter less than 10 microns in diameter, SO_2 = sulfur dioxide.

Attainment Plans

The MDAQMD has adopted a variety of attainment plans to demonstrate progress in managing nonattainment pollutants. Table 4.2-2 names the most-recent air quality management plans adopted for the purpose of attaining the applicable federal or state ambient air quality standards (MDAQMD 2016).

Table 4.2-2. Air Quality Attainment Plans Adopted by MDAQMD

Name of Plan	Date of MDAQMD Adoption	Standards Targeted	Applicable Area	Pollutants Targeted	Targeted Attainment Date
Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)	June 9, 2008	Federal 8-hour ozone (84 ppb)	Western Mojave Desert Nonattainment Area (MDAQMD portion)	NOx and VOC	2019 (revised from 2021)
2004 Ozone Attainment Plan (State and Federal)	April 26, 2004	Federal 1-hour ozone	Entire District	NOx and VOC	2007
Triennial Revision to the 1991 Air Quality Attainment Plan	January 22, 1996	State 1-hour ozone	Entire District	NOx and VOC	2005
Mojave Desert Planning Area Federal Particulate Matter Attainment Plan	July 31, 1995	Federal daily and annual PM10	Mojave Desert Planning Area	PM10	2000

Note: A historical attainment date given in an attainment plan does not necessarily mean that the affected area has been re-designated to attainment. Attainment must be demonstrated by measured data.
Source: MDAQMD 2016.

Sensitive Receptors

The MDAQMD defines certain land uses as sensitive to air pollution. Residences, schools, daycare centers, playgrounds and medical facilities are considered sensitive receptor land uses (MDAQMD 2016). The nearest sensitive land uses are residences near the eastern project property boundaries, where Proposed Project construction activities would be setback a minimum of 600 feet from the parcel boundaries of residences. The MDAQMD recommends evaluating risks from toxic air contaminants for situations where the distance between a sensitive receptor and an industrial project is less than 1,000 feet (MDAQMD 2016).

4.2.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Appendix A. Proposed Project-related air pollutant emissions would be within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). Local policies are summarized below.

4.2.2.1 County Plans and Requirements

San Bernardino Countywide Plan: 2020 County Policy Plan

The 2020 County Policy Plan (adopted October 2020) serves as the County's General Plan. The Natural Resources Element includes the following goal and policies relevant to the Proposed Project regarding emissions and air quality.

- ***Goal NR-1 Air Quality.*** *Air quality that promotes health and wellness of residents in San Bernardino County through improvements in locally-generated emissions.*
- ***Policy NR-1.1 Land use.*** *We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicle miles traveled and greenhouse gas emissions.*
- ***Policy NR-1.3 Coordination on air pollution.*** *We collaborate with air quality management districts and other local agencies to monitor and reduce major pollutants affecting the county at the emission source.*
- ***Policy NR-1.5 Sensitive land uses.*** *We consider recommendations from the California Air Resources Board on the siting of new sensitive land uses and exposure to specific source categories.*
- ***Policy NR-1.6 Fugitive dust emissions.*** *We coordinate with air quality management districts on requirements for dust control plans, revegetation, and soil compaction to prevent fugitive dust emissions.*
- ***Policy NR-1.7 Greenhouse gas reduction targets.*** *We strive to meet the 2040 and 2050 greenhouse gas emission reduction targets in accordance with state law.*
- ***Policy NR-1.8 Construction and operations.*** *We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.*

San Bernardino County 2007 Development Code (Amended 2019)

County Development Code, section 83.01.040 (regarding construction-phase air quality), specifies the following diesel exhaust emissions control measures for discretionary land use projects approved by the County on or after January 15, 2009:

- ***(1) On-Road Diesel Vehicles.*** *On-road diesel vehicles are regulated by the State of California Air Resources Board.*
- ***(2) Off-Road Diesel Vehicle/Equipment Operations.*** *All business establishments and contractors that use off-road diesel vehicle/equipment as part of their normal business operations shall adhere to the following measures during their operations in order to reduce diesel particulate matter emissions from diesel-fueled engines:*
    - *(A) Off-road vehicles/equipment shall not be left idling on site for periods in excess of 5 minutes. The idling limit does not apply to:*

- *(I) Idling when queuing;*
- *(II) Idling to verify that the vehicle is in safe operating condition;*
- *(III) Idling for testing, servicing, repairing or diagnostic purposes;*
- *(IV) Idling necessary to accomplish work for which the vehicle was designed (such as operating a crane);*
- *(V) Idling required to bring the machine system to operating temperature; and*
- *(VI) Idling necessary to ensure safe operation of the vehicle*

  - *(B) Use reformulated ultra-low sulfur diesel fuel in equipment and use equipment certified by the U.S. Environmental Protection Agency (EPA) or that pre-dates EPA regulations*
  - *(C) Maintain engines in good working order to reduce emissions*
  - *(D) Signs shall be posted requiring vehicle drivers to turn off engines when parked*
  - *(E) Any requirements or standards subsequently adopted by the South Coast Air Quality Management District, the Mojave Desert Air Quality Management District or the California Air Resources Board*
  - *(F) Provide temporary traffic control during all phases of construction*
  - *(G) On-site electrical power connections shall be provided for electric construction tools to eliminate the need for diesel-powered electric generators, where feasible*
  - *(H) Maintain construction equipment engines in good working order to reduce emissions. The developer shall have each contractor certify that all construction equipment is properly serviced and maintained in good operating condition.*
  - *(I) Contractors shall use ultra-low sulfur diesel fuel for stationary construction equipment as required by Air Quality Management District (AQMD) Rules 431.1 and 431.2 to reduce the release of undesirable emissions*
  - *(J) Substitute electric and gasoline-powered equipment for diesel-powered equipment, where feasible*

County Development Code section 84.29.035 (regarding County approval of a commercial solar energy facility) requires the County to make the following findings of fact relevant to fugitive dust emissions:

- *(20) The proposed commercial solar energy generation facility will be designed, constructed, and operated to minimize dust generation, including provision of sufficient watering of excavated or graded soil during construction to prevent excessive dust. Watering will occur at a minimum of three times daily on disturbed soil areas with active operations, unless dust is otherwise controlled by rainfall or use of a dust palliative, or other approved dust control measure.*

- *(21) All clearing, grading, earth moving, and excavation activities will cease during period of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property, and in conformance with Air Quality Management District (AQMD) regulations*
- *(22) For sites where the boundary of a new commercial solar energy generation facility will be located within one-quarter mile of a primary residential structure, an adequate wind barrier will be provided to reduce potentially blowing dust in the direction of the residence during construction and ongoing operation of the commercial solar energy generation facility*
- *(23) Any unpaved roads and access ways will be treated and maintained with a dust palliative or graveled or treated by another approved dust control method to prevent excessive dust, and paving requirements will be applied pursuant to Chapter 83.09 of the Development Code*
- *(24) On-site vehicle speed will be limited to 15 miles per hour*

4.2.2.2 Local Air District Rules and Regulations

The following local air district rules and regulations, as adopted by the MDAQMD would apply to the Proposed Project.

- ***Rules 201 and 203, Permits Required.*** *Requires a Permit to Construct before installing a stationary source of emissions, and requires obtaining a Permit to Operate for stationary equipment that emits or controls air pollutants. These rules apply to backup power generators.*
- ***Rule 401, Visible Emissions and Rule 402, Nuisance.*** *Limits the visible, nuisance, and/or fugitive dust emissions and would be applicable to all project activities.*
- ***Rule 403, Fugitive Dust Control.*** *Implements particulate matter control measures to reduce the amount of PM10 entrained in the ambient air from anthropogenic fugitive dust sources within the MDAQMD by requiring actions to prevent, reduce, or mitigate fugitive dust, and specifies mandatory elements for MDAQMD-approved Dust Control Plans (DCPs). This rule is applicable to: construction activities, including solar projects covering more than one acre, and other movement of vehicles on unpaved roads, unpaved access areas, unpaved traffic areas, disturbed surface areas, and unpaved equipment storage areas.*

The MDAQMD maintains recommendations for California Environmental Quality Act (CEQA) lead agencies in the region (MDAQMD 2016). According to the local air district guidance, a project that generates direct and indirect emissions in excess of the levels in Table 4.2-3 would be considered to cause a significant impact. The recommended significance thresholds apply to the emissions quantified annually and for any given day, including construction.

Table 4.2-3. Significant Emissions Thresholds						
Criteria Air Pollutant	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Annual Significance Thresholds (ton/year)	25	25	100	25	15	15
Daily Significance Thresholds (lb/day)	137	137	548	137	82	65

Source: MDAQMD 2016.

4.2.3 Significance Criteria

Significance criteria for air quality are based on CEQA Appendix G, Environmental Checklist Form. Impacts to air quality are considered significant if the Proposed Project would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation. Proposed Project-related emissions would be considered significant if total emissions (direct and indirect) in excess of the thresholds recommended by the MDAQMD. Daily emission thresholds would apply to the construction phase of the Proposed Project. The thresholds appear in Table 4.2-3.
- 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 (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

4.2.4 Environmental Impact Analysis and Mitigation

Methodology and Use of Thresholds

All construction- and operation-related emissions are quantified based on the best available forecast of activities. This analysis uses the California Emissions Estimator Model (CalEEMod; version 2020.4.0) software developed by the California Air Pollution Control Officers Association (CAPCOA). This is the most recent version of the CalEEMod software, and it relies upon mobile source emission factors from the CARB OFFROAD inventory and EMFAC2017 models. Where project-specific parameters are not yet defined, default and typical settings from CalEEMod are used. Default emission factors used in this analysis appear in the CalEEMod User's Guide Appendix D (2021). Modeling results are presented in EIR Appendix H.

The impacts of the Stagecoach Solar Generation Plant are presented in Section 4.2.4.1, and the impacts of the Stagecoach Gen-tie Line and SCE Calcite Facilities are summarized in Sections 4.2.4.2 and 4.2.4.3, respectively.

4.2.4.1 Impacts of the Stagecoach Solar Generation Plant

Impact AQ-1: Air pollutant emissions from construction and operation and maintenance.

Construction activities associated with the Proposed Project cause a significant increase of air pollutant emissions. **(Significant and Unavoidable)**

Impact Discussion

The Proposed Project would be in in the Western Mojave Desert portion of the Mojave Desert Air Basin, which is a designated non-attainment area for ozone and PM10. Criteria air pollutant emissions in excess of the MDAQMD's recommended quantitative thresholds for ozone precursors or PM10 would represent a significant increase of nonattainment pollutant. Emissions exceeding the quantitative thresholds could contribute to existing or projected violations of the ambient air quality standards.

Construction. Construction would generate emissions at the Proposed Project site and off-site along the roadways traveled by construction traffic. Construction emissions would be caused by exhaust from vehicles and equipment (this includes ozone precursors [volatile organic compound (VOC) or reactive organic gas (ROG) and NOx], CO, and particulate matter [PM10 and PM2.5]) and fugitive dust/particulate matter from ground-disturbing activities and travel on unpaved surfaces and on paved roads.

To minimize the amount of fugitive dust from unpaved surfaces and emissions from other ground-disturbing activities during the site preparation period, all construction activity would be required to comply with local air district rules regarding dust control (including MDAQMD Rule 403).

Diesel and gasoline-powered construction equipment would be classified as portable or as mobile sources (off-road equipment), and these sources are subject to statewide registration and fleet requirements. On-road motor vehicle emissions would occur primarily off-site. The on-road sources include the heavy-duty trucks to deliver equipment, concrete, water, and other materials, and light-duty vehicles carrying crews and medium-duty deliveries. For traffic that would occur primarily over the region-serving transportation network, these motor vehicle emissions would not be localized at the site but would contribute to the net emissions increase within the Mojave Desert Air Basin.

Construction-phase emissions are by their nature intermittent and variable due to the need for construction tasks to occur in sequences and adapt to changing site conditions. Additionally, emission sources would be dispersed across the site and not always used

continuously or at the same time, meaning that the sources of pollutants would be spread over large areas. Dust control and engine exhaust would be subject to MDAQMD rules and regulations to reduce the ambient air quality impacts of air pollutant concentrations.

Table 4.2-4 summarizes the annual emissions within each of two calendar years for construction of the Proposed Project, including the Stagecoach Solar Generation Plant, Stagecoach Gen-tie Line, and SCE Calcite Facilities. These emissions are estimated, without potential mitigation, and assuming that construction occurs across two calendar years (currently estimated to occur in 2023 and 2024).

Table 4.2-4. Project Construction-phase Emissions, without Mitigation (ton/year)

Criteria Air Pollutant	VOC	NOx	CO	SOx	PM10	PM2.5
Construction Year 1	4.98	50.42	40.70	0.11	167.99	22.92
Construction Year 2	4.24	39.31	46.99	0.12	261.65	27.99
Annual Significance Thresholds (ton/year)	25	25	100	25	15	15
Potentially Significant?	No	**Yes**	No	No	**Yes**	**Yes**

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).
Note: Emissions totals include Stagecoach Generation Facilities, Stagecoach Gen-tie Line, and SCE Calcite Facilities.

As shown in Table 4.2-4, construction-phase emissions would exceed the MDAQMD's recommended quantitative thresholds for NOx as an ozone precursor, PM10, and PM2.5. This level of emissions would result in a potentially significant impact due to existing non-attainment conditions for ozone and PM10 in the air basin.

To reduce these emissions, mitigation measures are recommended to reduce construction-related NOx, PM10, and PM2.5. Available mitigation includes specific dust control practices, as defined in Mitigation Measure (MM) AQ-1a and standards to require controls for off-road equipment engines, defined in MM AQ-1b.

Dust control (MM AQ-1a) would substantially reduce the construction emissions of PM10 and PM2.5. MM AQ-1a would require use of soil stabilizers or watering exposed areas (3 times per day, or as frequently as necessary to minimize fugitive dust generation) subject to inspection and field monitoring, according to the Dust Control Plan requirements and performance standards in MDAQMD's Rule 403. With implementation of the mitigation requirements, onsite activities would need to be designed, constructed, and operated to prevent airborne fugitive dust plumes from impacting public roads, occupied structures or other neighboring property. To conserve water while controlling dust, mitigation (MM AQ-1a) would allow use of chemical dust palliatives on unpaved roads and other areas susceptible to wind erosion.

Mitigation for emissions from off-road equipment (MM AQ-1b) specifies use of equipment that complies with Tier 4 engine emissions standards for NOx, PM10, and PM2.5 reduction. In the effort to mitigate construction off-road equipment emissions of NOx, the add-on control devices cause exhaust emissions of CO to increase somewhat. However, CO is a pollutant that causes no existing violations of ambient air quality standards in the Proposed Project area, and project-related CO emissions would not remain less than the threshold of significance.

Table 4.2-5 summarizes the annual emissions within each of two calendar years for construction of the Proposed Project, including the Stagecoach Solar Generation Plant, Stagecoach Gen-tie Line, and SCE Calcite Facilities, with mitigation for dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b).

Table 4.2-5. Project Construction-phase Emissions, with Mitigation (ton/year)

Criteria Air Pollutant	VOC	NOx	CO	SOx	PM10	PM2.5
Construction Year 1	1.44	8.25	49.26	0.11	31.16	5.44
Construction Year 2	1.60	11.79	55.59	0.12	44.19	5.07
Annual Significance Thresholds (ton/year)	25	25	100	25	15	15
Potentially Significant?	No	No	No	No	**Yes**	No

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).
Note: Emissions totals include Stagecoach Generation Facilities, Stagecoach Gen-tie Line, and SCE Calcite Facilities.

While Table 4.2-4 and Table 4.2-5 present annual emissions, the Proposed Project would have different phases of construction activity during which emissions would vary from day to day within a given calendar year. Therefore, the potential emissions during any given day of construction must be compared with the MDAQMD daily significance thresholds.

Table 4.2-6 and Table 4.2-7 present the daily construction emissions for the Stagecoach Generation Facilities and the Stagecoach Gen-tie Line. The daily peak rates of construction emissions would exceed MDAQMD's daily thresholds during certain phases of construction, without consideration of emission reductions that would result from mitigation.

Table 4.2-6. Stagecoach Generation Facilities and Gen-tie Line Maximum Daily Construction Emissions, without Mitigation (lb/day)						
Criteria Air Pollutant	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Solar Site Preparation – 2023	44.0	458.2	326.4	0.9	945.3	163.7
Solar Installation – 2023	35.8	329.2	352.1	1.0	2,318.6	246.9
Solar Installation – 2024	34.4	312.5	347.4	1.0	2,317.7	246.0
Solar Electrical – 2024	16.9	152.0	216.4	0.4	802.8	87.5
Solar Gen-tie – 2024	1.8	16.2	18.6	0.1	424.2	43.5
Construction of Solar Generation Plant with Gen-tie – 2023	**79.8**	**787.5**	**678.5**	**1.8**	**3,263.9**	**410.6**
Construction of Solar Generation Plant with Gen-tie – 2024	**53.1**	**480.7**	**582.4**	**1.5**	**3,544.7**	**377.0**
Daily Significance Thresholds (lb/day)	137	137	548	137	82	65
Potentially Significant?	No	**Yes**	**Yes**	No	**Yes**	**Yes**

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).

Table 4.2-7 summarizes the daily emissions with mitigation in place for dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b) to reduce the total emissions of NOx, PM10 and PM2.5.

Table 4.2-7. Stagecoach Generation Facilities and Gen-tie Line Maximum Daily Construction Emissions, with Mitigation (lb/day)						
Criteria Air Pollutant	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Solar Site Preparation – 2023	11.0	54.1	393.9	0.9	194.6	45.9
Solar Installation – 2023	13.8	82.0	430.1	1.0	390.0	44.3
Solar Installation – 2024	13.4	81.2	425.5	1.0	390.0	44.3

Table 4.2-7. Stagecoach Generation Facilities and Gen-tie Line Maximum Daily Construction Emissions, with Mitigation (lb/day)						
Criteria Air Pollutant	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Solar Electrical – 2024	5.9	45.1	243.7	0.4	134.8	15.4
Solar Gen-tie – 2024	1.2	12.2	20.1	0.1	71.6	8.0
Construction of Solar Generation Plant with Gen-tie – 2023	**24.8**	**136.2**	**824.0**	**1.8**	**584.7**	**90.1**
Construction of Solar Generation Plant with Gen-tie – 2024	**20.5**	**138.5**	**689.2**	**1.5**	**596.5**	**67.7**
Daily Significance Thresholds (lb/day)	137	137	548	137	82	65
Potentially Significant?	No	**Yes**	**Yes**	No	**Yes**	**Yes**

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).

Table 4.2-7 shows that implementation of mitigation for dust control practices (MM AQ-1a) and for off-road equipment engine standards (MM AQ-1b) would reduce the maximum daily emissions during construction. However, with mitigation, construction emissions for the Stagecoach Solar Generation Plant with the gen-tie line would continue to exceed the MDAQMD thresholds. The impact of increased criteria air pollutant emissions during construction would be significant and unavoidable.

Operation and Maintenance. Operations-related emissions would be created during activities for routine and corrective maintenance and repairs of the Stagecoach Facilities, including panel washing, vegetation treatment, and security. These activities would involve up to 10 full-time workers. The Proposed Project would be required by MDAQMD Rule 403 to implement controls such as the use of water or chemical dust suppressants to minimize particulate matter emissions, to prevent visible emissions, and to avoid nuisances.

The solar generation plant would include two 100-kW propane-powered generator engines: one at the substation, and one at the operation and maintenance (O&M) building. Each generator engine would operate up to 300 hours per year, and these would likely be exempt from the MDAQMD requirements to obtain air permits as small general combustion source [MDAQMD Rule 219(E)(2)(b)]. These stationary sources of emissions would be included with the Proposed Project operations emissions totals.

Table 4.2-8 shows the estimated emissions during project operation.

Table 4.2-8. Project Operations-phase Emissions (ton/year)						
Criteria Air Pollutant	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Area Sources	0.08	0.01	0.82	< 0.01	< 0.01	< 0.01
Mobile Sources (On-road Motor Vehicles)	0.13	0.31	1.84	< 0.01	0.46	0.13
Propane Generators	0.35	0.58	0.54	< 0.01	0.02	0.02
Total (ton/year)	**0.55**	**0.89**	**3.20**	**0.01**	**0.49**	**0.15**
Annual Significance Thresholds (ton/year)	25	25	100	25	15	15
Potentially Significant?	No	No	No	No	No	No

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).
Note: Emissions totals include Stagecoach Generation Facilities, Stagecoach Gen-tie Line, and SCE Calcite Facilities.

As shown in Table 4.2-8, emissions during O&M would be small due to the limited number of workers, and O&M emissions would not exceed the MDAQMD thresholds. Operation of the Proposed Project would not result in a considerable net increase of any criteria pollutant. To ensure that the Proposed Project implements adequate emissions control practices during O&M, and ensure compliance with MDAQMD Rule 403, mitigation would be required to reduce the impact of O&M to a less than significant level.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control. Prior to the issuance of grading permits, the Applicant shall submit a Dust Control Plan to the Mojave Desert Air Quality Management District, the County, and the Commission for review and approval. The plan shall describe the fugitive dust control measures which would be implemented and monitored at all locations of proposed project construction. The plan shall comply with the mitigation measures described in the Fugitive Dust Control Rules enforced by the MDAQMD (Rule 403), San Bernardino County Development Code sections 83.01.040 and 84.29.035, as well as the existing State Implementation Plan available for PM10 and PM2.5. The plan shall be incorporated into all contracts and contract specifications for construction work and operation of onsite activities. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction and operation of onsite activities by:

- Describing each active operation that may result in the generation of fugitive dust
- Identifying all sources of fugitive dust, e.g., earthmoving, storage piles, vehicular traffic

- Describing the control measures to be applied to each of the sources identified. The descriptions shall be sufficiently detailed to demonstrate that the best available control measures required by air districts for solar projects are used.
- Providing the following control measures, in addition to or as listed in the applicable rules, but not limited to:
    - Manage and limit disturbance of ground surfaces from vehicle traffic, excavation, grading, vegetation removal, or other activities to lower the potential for soil detachment and reduce dust transport. Maximize the use of compaction methods rather than the removal of topsoil other than in areas where excavation or grading are required. This process referred to as mow-and-roll (agricultural land) or plate-and-roll (native vegetation) lessens the level of ground disturbance and leaves the root system in place for quicker regeneration of vegetative cover.
    - Watering will occur at a minimum of three times daily on disturbed soil areas with active operations, including maintenance and access vehicular roads and parking areas, unless dust is otherwise controlled by rainfall or use of a chemical dust palliative, gravel, asphaltic pavement, or other approved dust control measure sufficient to minimize visible fugitive dust from vehicular travel and wind erosion and comply with MDAQMD Rule 403. Actions, including sweeping sealed roads, use of stabilized construction/facility entrances, and, if needed, using one or more entrance/exit vehicle tire wash apparatuses, shall be taken to prevent project-related track-out. Any project-related track-out must be cleaned within 24 hours.
    - Water conservation may be achieved by using a non-toxic chemical dust palliative or soil weighting agent. Non-water-based soil stabilizers shall be as efficient as or more efficient for fugitive dust control than Air Resources Board (ARB)-approved soil stabilizers and shall not increase any other environmental impacts, including loss of vegetation, adverse odors, or emissions of ozone precursor reactive organic gases (ROG) or volatile organic compounds (VOC).
    - Use natural vegetation to stabilize disturbed or otherwise unstable surfaces to the extent feasible
    - All clearing, grading, earth moving, and excavation activities will cease during period of winds greater than 20 miles per hour (averaged over one hour), or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property, and in conformance with MDAQMD regulations
    - An adequate wind barrier shall be provided where the boundary of a new commercial solar energy generation facility will be located within one-

quarter mile of a primary residential structure, to reduce potentially blowing dust in the direction of the residence during construction and ongoing operation of the commercial solar energy generation facility

- A water truck shall be used to maintain most disturbed surfaces and to actively spread water during visible dust episodes to minimize visible fugitive dust and limit emissions to 20 percent opacity in areas where grading occurs, within the staging areas, and on any unpaved roads. For projects with exposed sand or fines deposits (and for projects that expose such soils through earthmoving), chemical stabilization or covering with a stabilizing layer of gravel may be required to eliminate visible dust/sand from sand/fines deposit, if water application does not achieve stabilization. Other controls could include application of hydromulch (with seed for re-establishment of vegetation), application of soil binders, or the use of soil cement for particularly unstable areas.
- Minimize the idling time of diesel-powered construction equipment to 5 minutes, except in extreme heat events where workers require conditioned air to avoid health and safety issues
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site
- On-site vehicle speed shall be limited to 15 miles per hour
- The following signage shall be erected not later than the commencement of construction:
- A minimum 48-inch-high by 96-inch-wide sign containing the following information shall be located within 50 feet of each project site entrance, meeting the specified minimum text height, black text on white background, on 1-inch A/C laminated plywood board, with the lower edge between 6 and 7 feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day

  “Site Name” (4-inch text)
  “Project Name/Project Number” (4-inch text)
  IF YOU SEE DUST COMING FROM THIS PROJECT, CALL: (4-inch text)
  [Contact Name]. PHONE NUMBER: XXX-XXX-XXXX (6-inch text)
  IF YOU DO NOT RECEIVE A RESPONSE, PLEASE CALL the MDAQMD at 1-800-635-4617. (3-inch text)

- The Applicant or its designated representative shall obtain prior approval from the MDAQMD prior to any deviations from fugitive dust control measures specified in the approved Air Quality Construction Management Plan. A justification statement used to explain the technical and safety reason(s) for the

substitute dust control measures required shall be submitted to the appropriate agency for review.

- The provisions of the Fugitive Dust Control Plan shall also apply to project decommissioning activities

MM AQ-1b: Control On-Site Off-Road Equipment Emissions. The Applicant, when entering into construction contracts or when procuring off-road equipment or vehicles for on-site construction or operation and maintenance (O&M) activities, shall ensure that only new model year equipment or vehicles are obtained. The following measures would be included with contract or procurement specifications:

- All construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, with a rating of 50 hp or higher shall meet the Tier 4 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, title 13, section 2423, subdivision (b)(1), unless a good faith effort demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 engine is not available for any off-road equipment larger than 50 hp, a Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by the engine manufacturers that the use of such devices is not practical for specific engine types.
- All diesel-fueled engines used in the construction of the facility shall have clearly visible tags showing that the engine meets the standards of this measure
- All equipment and trucks used in the construction or O&M of the facility shall be properly maintained and the engines tuned to the engine manufacturer's specifications
- All diesel heavy construction equipment shall not idle for more than 5 minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

Residual Impacts

Even with mitigation, construction activities would cause emissions increases of NOx, PM10, and PM2.5 that would remain significant due to the existing non-attainment conditions for ozone and PM10 in the air basin. This impact would cease after construction. Operational vehicle emissions and dust would also occur, but these would be minor and controlled by compliance with MDAQMD requirements and previously identified mitigation.

Impact AQ-2: Consistency with regional air quality plans.

The Proposed Project would be consistent with regional air quality plans. **(Less than Significant with Mitigation)**

Impact Discussion

For the Proposed Project area, the MDAQMD and CARB ensure implementation of California's air quality management plans, known collectively as the State Implementation Plan. State-level air quality planning strategies to attain CAAQS are implemented through rules, regulations, and programs adopted by MDAQMD and CARB to control ozone precursors and PM10. Proposed Project-related activities must comply with the applicable rules, regulations, and programs. Strategies and control measures identified within the regional air quality attainment plans would apply to all activities in the Proposed Project area and to the construction and operation of Proposed Project itself, where promulgated through MDAQMD's rules and regulations.

A project could be inconsistent with the applicable air quality management plan or attainment plan if it caused population and/or employment growth or growth in vehicle-miles traveled in excess of the growth forecasts included in the attainment plan. Construction activities causing fugitive dust would be required to comply with MDAQMD's Rules 401, 402, and 403, which prevent nuisance and regulate fugitive dust emissions, as well as Proposed Project-specific mitigation measures. Upon commencing routine operation, the temporary construction workforce would no longer be employed at the Proposed Project site, and only a small number of permanent employees would remain active in the area. There would be no substantial change in overall employment caused by Proposed Project operation. With mitigation, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations.

The Proposed Project construction phase emissions would create local increases in concentrations of criteria air pollutants and toxic air contaminants. **(Significant and Unavoidable)**

Impact Discussion

This criterion assesses whether the Proposed Project would expose sensitive receptors to substantial pollutant concentrations of toxic air contaminants or dust with a risk of Valley Fever. Construction activities would result in locally increased concentrations of construction-related emissions, including criteria air pollutants, diesel particulate matter (DPM) and other toxic air contaminants, which would cause increased health risk and hazards near the site.

Health hazards related to Valley Fever are discussed in Section 4.9, *Hazards and Hazardous Materials* (see Impact HAZ-4 in Section 4.9.4.1).

Criteria Air Pollutants. Construction emissions of air pollutants would occur across a large area and at variable rates during a short-term period of approximately 18 months. The mass of increased criteria air pollutant emissions during construction would lead to incremental changes in downwind concentrations of the criteria air pollutants.

The discussion of Impact AQ-1 identifies mitigation to reduce construction-related emissions of criteria air pollutants. The mitigation for that impact focuses on implementing dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b) to reduce the potential near-field impacts caused by on-site construction.

Emissions from off-site sources, including on-road vehicles and vehicles on the regional roadways, would be less likely to influence locally increased concentrations than the off-road equipment that dominate near-field impacts. The mitigation measures defined for Impact AQ-1 would also reduce the mass of criteria pollutant emissions in the regional context, which would also minimize the adverse health effects of incremental criteria pollutant concentrations. Even with mitigation, the locally increased concentrations of criteria air pollutants during the short-term construction period could cause exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels. This impact would be significant and unavoidable during the construction period.

Toxic Air Contaminants. The primary TAC of concern would be DPM emitted by diesel-powered equipment. For a large site such as the Proposed Project site, concentrations of DPM emissions from diesel-powered construction equipment and vehicles would be greatly reduced by the distance between construction activities and receptors far from the site.

Proposed Project construction activities would be setback a minimum of 600 feet from the parcel boundaries of residences, and the nearest residential structures themselves are setback further from the property boundaries. Normally, a separation of 1,000 feet allows sensitive land uses to avoid high levels of DPM concentrations (CARB 2005). The MDAQMD recommends evaluating risks from toxic air contaminants for situations where the distance between a sensitive receptor and an industrial project is less than 1,000 feet

(MDAQMD 2016). Given these distances, and the fact that the Proposed Project would not have notable industrial stationary sources of operational emissions, it would not warrant additional analysis of air quality health risks or hazards under the MDAQMD recommendation.

With implementation of recommended mitigation for off-road equipment engine standards (MM AQ-1b), emissions from construction-related diesel-powered equipment and vehicles would be minimized. Even with mitigation, the locally increased concentrations of toxic air contaminants during the short-term construction period could result in substantial DPM concentrations, and the impact of toxic air contaminants would be significant and unavoidable.

Valley Fever. As discussed in Section 4.9.1.1, soils in some areas of California host the microscopic fungus that causes Valley Fever, known as *Coccidioides immitis*, which lives in the top 2 to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled. Workers in San Bernardino County are less at risk than those in the Central Valley, where the greatest incidence of reported human Valley Fever cases occur (CDPH 2019). Proposed Project construction activities would be subject to stringent dust control requirements (including MDAQMD Rule 403) in addition to recommended mitigation for dust control (MM AQ-1a). Implementation of these measures would avoid exposing construction workers and the off-site population to substantial concentrations of dust. As such, the impact of potential exposure to Valley Fever would be less than significant with mitigation.

Operation and Maintenance. During O&M, emissions would occur in limited quantities from the occasional use of equipment and vehicles for routine maintenance, repair, and inspection. Two new stationary sources of emissions would be included with the solar generation plant: two propane-powered generator engines, rated at 100 kW each, for the substation and O&M building. These propane engines would not be notable sources of criteria air pollutants or TACs.

Mandatory regulatory controls would minimize and avoid impacts from dust emissions and O&M equipment and vehicle exhaust so that O&M emissions would not result in substantial concentrations of any air pollutants.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Residual Impacts

Even with mitigation, construction activities would contribute to locally increased concentrations of criteria air pollutants, DPM and other toxic air contaminants, which would cause increased health risk and hazards near the site. These risks would cease after construction. Because of the minor quantities of emissions during long-term O&M activities, the residual increases in air pollutant concentrations would also be minor.

Impact AQ-4: Creation of objectionable odors affecting a substantial number of people.

The Proposed Project would not create objectionable odors and odors would not affect a substantial number of people. **(Less than Significant)**

Impact Discussion

The Proposed Project would not include any notable source of odors except for very small quantities of coatings that may include organic compounds. Construction odors would be minimal because of the mandatory use of ultra-low sulfur diesel fuel, and odors would not negatively affect a substantial number of people. This impact would be less than significant, and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

4.2.4.2 Impacts of the Stagecoach Gen-tie Line

The Stagecoach Gen-tie Line would be an approximately 9.1-mile-long 220 kV transmission line to interconnect the solar generation plant with the proposed SCE Calcite Facilities.

The gen-tie line would be constructed in the same geographic region as the solar generation plant and would serve to deliver renewable energy to California's end-users of electricity. Quantities of air pollutant emissions related to construction of the gen-tie line are included with those of the solar generation plant. In general, the impacts associated with construction of the gen-tie line are the same as those described in Section 4.2.4.1, because the emissions associated with the construction and operation of the gen-tie line were included in that analysis. Differences are described briefly below.

Impact AQ-1: Air pollutant emissions from construction and operation and maintenance.

Construction activities associated with the Stagecoach Gen-tie Line would cause a significant increase of air pollutant emissions. **(Significant and Unavoidable)**

Impact Discussion

See discussion in Section 4.2.4.1 for quantification of construction and O&M emissions for the Stagecoach Solar Generation Plant with the gen-tie line. With mitigation, as shown in Table 4.2-7 construction emissions would continue to exceed the MDAQMD thresholds. Emissions during O&M, shown in Table 4.2-8, would be minor and less than the MDAQMD thresholds. Construction-phase emissions related to the gen-tie line would contribute to a significant and unavoidable impact (Impact AQ-1) due to existing non-attainment conditions for ozone and PM10 in the air basin.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Residual Impacts

Even with mitigation, construction of the Stagecoach Solar Generation Plant with the gen-tie line would cause emissions increases of NOx, PM10, and PM2.5 that would remain significant due to the existing non-attainment conditions for ozone and PM10 in the air basin. This impact would cease after construction. Operational vehicle emissions and dust would also occur, but these would be minor and controlled by compliance with MDAQMD requirements.

Impact AQ-2: Consistency with regional air quality plans.

The Stagecoach Gen-tie Line would be consistent with regional air quality plans. **(Less than Significant with Mitigation)**

Impact Discussion

See discussion in Section 4.2.4.1. Similar to the Stagecoach Solar Generation Plant, construction and operation of the gen-tie line would be consistent with regional air quality plans. With mitigation, the gen-tie line would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations.

The Stagecoach Gen-tie Line would not create substantial local increases in concentrations of criteria air pollutants or toxic air contaminants. **(Less than Significant with Mitigation)**

Impact Discussion

Gen-tie line construction emissions would occur within easements that are adjacent to the boundaries of some parcels with residential land uses. The nearest gen-tie construction emissions would occur 200 to 300 feet from scattered inhabited dwellings, shown on Figure 4.11-1a and Figure 4.11-1b.

The construction-related emissions would be short-term and dispersed along the approximately 9.1-mile-long 220 kV transmission line, ensuring that no single location would be exposed to substantially increased pollutant concentrations. The duration of exposure would be limited to brief periods of gen-tie construction at any single location along the linear alignment. Because the nearest sensitive receptor would be 200 to 300 feet from the gen-tie construction activities and because of the brief durations of construction along the alignment, gen-tie construction-phase emissions would not expose any sensitive receptors to substantial concentrations. O&M activities associated with the gen-tie line would generate minor amounts of emissions.

Mitigation identified for the solar generation plant would apply to ensure implementing dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b) to reduce the potential near-field impacts caused by gen-tie line construction.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Impact AQ-4: Creation of objectionable odors affecting a substantial number of people.

The Stagecoach Gen-tie Line would not create objectionable odors and odors would not affect a substantial number of people. **(Less than Significant)**

Impact Discussion

Similar to the Stagecoach Solar Generation Plant, construction and operation of the gen-tie line would not include any notable source of odors except for very small quantities of coatings that may include organic compounds. Construction odors would be minimal because of the mandatory use of ultra-low sulfur diesel fuel, and odors would not

negatively affect a substantial number of people. This impact would be less than significant, and no mitigation would be required.

4.2.4.3 Impacts of the SCE Calcite Facilities

The SCE Calcite Facilities would be constructed and owned by SCE, and electricity generated by the Stagecoach Facilities would be delivered to California's transmission grid through the proposed SCE Calcite Facilities. The electricity generated by the Stagecoach Facilities and other potential solar projects that may connect to the SCE Calcite Substation in the future would be sold to a power purchaser, or a load-serving entity, for sale to California's end-users of electricity.

The substation would be constructed in the same geographic region as the solar generation plant and would serve to deliver renewable energy to California's end-users of electricity. Quantities of air pollutant emissions related to construction of the SCE Calcite Facilities are included with those of the solar generation plant and gen-tie line, described in Section 4.2.4.1, and itemized below, separately from those of the solar generation plant and gen-tie line.

Impact AQ-1: Air pollutant emissions from construction and operation and maintenance.

Construction activities associated with the SCE Calcite Facilities alone and in conjunction with the Stagecoach Facilities would cause a significant increase of air pollutant emissions. **(Significant and Unavoidable)**

Impact Discussion

Emissions associated with construction and O&M for the SCE Calcite Facilities are similar to those described in Section 4.2.4.1, with quantification of construction emissions for the SCE Calcite Facilities as described below.

Table 4.2-9 itemizes the construction emissions for the SCE Calcite Facilities, without potential mitigation.

Table 4.2-9. SCE Calcite Facilities Maximum Daily Construction Emissions, without Mitigation (lb/day)

Criteria Air Pollutant	VOC	NOx	CO	SOx	PM10	PM2.5
Substation Grading – 2023	4.8	49.2	40.6	0.1	305.2	38.0
Substation Installation – 2023	4.5	43.0	56.4	0.1	291.8	31.2
Substation Installation – 2024	4.2	40.6	55.9	0.1	291.7	31.0
Substation Paving and Testing – 2024	1.3	15.3	16.0	0.1	183.5	19.1
Construction of SCE Calcite Facilities – 2023	**9.3**	**92.2**	**97.0**	**0.3**	**597.0**	**69.2**
Construction of SCE Calcite Facilities – 2024	**5.5**	**55.9**	**71.9**	**0.2**	**475.2**	**50.1**
Daily Significance Thresholds (lb/day)	137	137	548	137	82	65
Potentially Significant?	No	No	No	No	**Yes**	**Yes**

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).

Table 4.2-10 itemizes the construction emissions for the SCE Calcite Facilities, including recommended mitigation for dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b).

Table 4.2-10. SCE Calcite Facilities Maximum Daily Construction Emissions, with Mitigation (lb/day)

Criteria Air Pollutant	VOC	NOx	CO	SOx	PM10	PM2.5
Substation Grading – 2023	1.5	13.1	46.0	0.1	55.1	8.7
Substation Installation – 2023	1.7	15.5	64.6	0.1	49.2	5.6
Substation Installation – 2024	1.7	15.4	64.1	0.1	49.2	5.6
Substation Paving and Testing – 2024	0.6	10.0	17.7	0.1	31.1	3.6
Construction of SCE Calcite Facilities – 2023	**3.3**	**28.6**	**110.6**	**0.3**	**104.3**	**14.3**
Construction of SCE Calcite Facilities – 2024	**2.3**	**25.4**	**81.8**	**0.2**	**80.3**	**9.2**
Daily Significance Thresholds (lb/day)	137	137	548	137	82	65
Potentially Significant?	No	No	No	No	**Yes**	No

Source: CalEEMod Results of Emissions Estimates (see EIR Appendix H).

With mitigation, as shown in Table 4.2-10, SCE Calcite Facilities construction emissions would continue to exceed the MDAQMD threshold for PM10. Construction-phase emissions related to the SCE Calcite Facilities would contribute to a significant and unavoidable

impact (Impact AQ-1) due to existing non-attainment conditions for ozone and PM10 in the air basin.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Residual Impacts

Even with mitigation, construction activities associated with the SCE Calcite Substation would cause emissions increases of PM10 that would remain significant due to the existing PM10 non-attainment conditions in the air basin. This impact would cease after construction. Operational vehicle emissions and dust would also occur, but these would be minor and controlled by compliance with MDAQMD requirements.

Impact AQ-2: Consistency with regional air quality plans.

The SCE Calcite Facilities would be consistent with regional air quality plans. **(Less than Significant with Mitigation)**

Impact Discussion

See discussion in Section 4.2.4.1. Similar to the Stagecoach Solar Generation Plant, construction and operation of the SCE Calcite Facilities would be consistent with regional air quality plans. With mitigation, the SCE Calcite Facilities would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations.

The SCE Calcite Facilities would not create substantial local increases in concentrations of criteria air pollutants or toxic air contaminants. **(Less than Significant with Mitigation)**

Impact Discussion

The nearest residence is approximately 700 feet from the nearest proposed components of the SCE Calcite Facilities, as shown on Figure 4.11-1a and Figure 4.11-1b.

The construction-related emissions for the SCE Calcite Facilities would be short-term within the approximately 18-month construction timeframe, ensuring that no single location would be exposed to substantially increased pollutant concentrations. The nearest sensitive receptor would be approximately 700 feet from the construction activities for the SCE Calcite Facilities. Mitigation identified for the solar generation plant would apply to ensure implementing dust control practices (MM AQ-1a) and off-road equipment engine standards (MM AQ-1b) to reduce the potential near-field impacts caused by construction of the SCE Calcite Facilities, and with mitigation construction-phase emissions would not expose any sensitive receptors to substantial concentrations. O&M activities associated with the substation and its interconnection facilities would generate minor amounts of emissions.

Mitigation Measures

MM AQ-1a: Fugitive Dust Control

MM AQ-1b: Control On-Site Off-Road Equipment Emissions

Impact AQ-4: Creation of objectionable odors affecting a substantial number of people.

The SCE Calcite Facilities would not create objectionable odors and odors would not affect a substantial number of people. **(Less than Significant)**

Impact Discussion

Similar to the Stagecoach Solar Generation Plant, construction and operation of the SCE Calcite Facilities would not include any notable source of odors except for very small quantities of coatings that may include organic compounds. Construction odors would be minimal because of the mandatory use of ultra-low sulfur diesel fuel, and odors would not negatively affect a substantial number of people. This impact would be less than significant, and no mitigation would be required.

4.2.5 Cumulative Impacts

4.2.5.1 Geographic Scope

The geographic area affected by the Proposed Project and the potential to contribute to cumulative impacts is based on the topography of the area and the natural boundaries affecting air resources. For air quality, the geographic scope of cumulative effects includes consideration of regional air emissions within the Western Mojave Desert portion of the Mojave Desert Air Basin.

4.2.5.2 Cumulative Impact Analysis

The Proposed Project would not contribute to potential cumulative effects for Impacts AQ-2 (Consistency with Regional Air Quality plans) and AQ-4 (Creation of Objectionable Odors).

Impact AQ-1 and AQ-3: Air Pollutant Emissions and Exposure of Sensitive Receptors to Toxic Air Pollutants

The construction-phase emissions related to the Proposed Project would likely occur concurrently with other cumulative projects in the Western Mojave Desert portion of the Mojave Desert Air Basin and would contribute to the adverse effects of other cumulative projects to result in a cumulative significant impact to air quality.

The incremental contribution of the Proposed Project to the cumulative impact would be reduced by implementing MM AQ-1a (Fugitive Dust Control) and MM AQ-1b (Control On-Site Off-Road Equipment Emissions) identified in the discussion of Impact AQ-1 (Section 4.2.4.1). Because construction-related air pollutant emissions would cease after the approximately 18-month construction timeframe, the construction emissions would not cause substantial long-term cumulative impacts. The incremental contribution of the Proposed Project to the cumulative air quality impact would be reduced to the extent feasible during construction, but the cumulative impact would remain significant.

During O&M activities, only a small workforce would be needed, and the minor quantities of long-term operational emissions would not cause substantial impacts. The incremental contribution of the Proposed Project to the cumulative air quality impact would not be cumulatively considerable.

4.2.6 Mitigation Measure Summary

Table 4.2-11 summarizes the mitigation measures identified in this EIR to reduce or avoid potentially significant impacts to air quality. These mitigation measures apply to impacts for the Stagecoach Facilities and the SCE Calcite Facilities.

Table 4.2-11. Impact and Mitigation Measure Summary

Impact	Mitigation Measures
Impact AQ-1: Air pollutant emissions from construction and operation and maintenance	**MM AQ-1a:** Fugitive Dust Control **MM AQ-1b:** Control On-Site Off-Road Equipment Emissions
Impact AQ-2: Consistency with regional air quality plans	**MM AQ-1a:** Fugitive Dust Control **MM AQ-1b:** Control On-Site Off-Road Equipment Emissions

Table 4.2-11. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations	**MM AQ-1a:** Fugitive Dust Control **MM AQ-1b:** Control On-Site Off-Road Equipment Emissions
Impact AQ-4: Creation of objectionable odors affecting a substantial number of people	No mitigation required

4.3 BIOLOGICAL RESOURCES

This section describes the biological resources in the Proposed Project vicinity, evaluates the type and significance of impacts that may occur as a result of the Proposed Project, and identifies measures to avoid or substantially lessen any impacts found to be potentially significant.

The following issues raised during scoping are addressed in this section:

- Preserving connectivity within wildlife corridors, including the Desert Renewable Energy Conservation Plan (DRECP) Desert Linkage Network and desert tortoise conservation area (TCA) habitat linkages.
- Potential impacts to creosote rings.
- Potential impacts to wildlife habitat.
- Cumulative effects of the Proposed Project and the Southern California Edison (SCE) Calcite Facilities.
- Consistency with the Apple Valley Multi-Species Habitat Conservation Plan, which is currently being developed.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC.
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system.
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system.

4.3.1 Environmental Setting

This section describes the biological resources that occur on and in the vicinity of the Proposed Project, including the Stagecoach Solar Generation Plant and the Stagecoach Gen-tie Line (collectively known as the Stagecoach Facilities), the SCE Calcite Facilities, and the area surrounding them (as illustrated in Figure 2-3 in Section 2). It includes a description of the existing biotic environment, including sensitive habitats and natural communities as well as special-status species and their locations in relation to the Proposed Project area. This information is summarized from the Biological Resources Technical Report (BRTR, Appendix F), and additional technical reports as listed below. Throughout these technical reports, other literature references are incorporated and cited to support their descriptions of biological resources. This section summarizes the technical reports without repeating the citations therein, and presents additional citations where appropriate.
Approach to Data Collection

Literature Review

Sensitive biological resources occurring or with potential to occur in the Proposed Project area or vicinity were identified through a review of literature sources, including USFWS's Information for Planning and Consultation (IPAC) (USFWS 2020), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2020b), CNDDB QuickView Tool (CDFW 2017a), the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2018), and Calflora's – What Grows Here (Calflora 2017). For the CNDDB and CNPS Electronic Inventory of Rare and Endangered Plants search, the Apple Valley North, Cougar Buttes, Fairview Valley, Fifteenmile Valley, Grand View Mine, Lucerne Valley, Stoddard Well, Turtle Valley, West Ord Mountain, and White Horse Mountain 7.5-minute U.S. Geological Survey (USGS) topographic quads were included. These quads are all within 5 miles of the Proposed Project area.

Biological survey reports for the Proposed Project area were reviewed including:

Solar Site and Gen-tie

- Biological Resources Technical Report (Aspen 2020a)
- Jurisdictional Delineation (ECORP 2020a)
- Aerial Raptor Nest Survey Results (WEST 2020a)
- Results of Joshua Tree Survey (ECORP 2020b)

SCE Calcite Substation

- Habitat Assessment (BRC 2016a)
- Mohave Ground Squirrel Habitat Assessment (BRC 2016b)
- Botanical Report (BRC 2016c)
- Burrowing Owl Focused Survey (2016d)

- Desert Tortoise Protocol Survey (2016e,f)
- Wetlands and Other Waters Jurisdictional Delineation Report (2016g)

Literature reviewed for Mohave ground squirrel (*Xerospermophilus mohavensis*) occurrence probability included range maps, scientific journal articles, CDFW's Biogeographic Information and Observation System (BIOS) (CDFW 2017b), and available trapping data for the region, including survey data collected between 1997 and 2012 compiled by Mohave ground squirrel researcher Dr. Philip Leitner (Leitner 2008; Leitner 2015). The CNDDB database only documents positive occurrences of the species and contains records dating back to the late 19th century. The BIOS database contains the positive records from the CNDDB but also includes data from outside databases that report both positive and negative occurrences in specific regional areas. The Leitner data compilations detail the positive and negative results of trapping grids (protocol and non-protocol) and remote camera trapping stations, and visual observations from MGS permit holders between 1998 and 2007 (Leitner 2008) and between 2008 and 2012 (Leitner 2015).

Literature reviewed for golden eagle occurrence probability included a 2020 focused survey report for the Proposed Project area (WEST 2020a), and additional Bureau of Land Management (BLM) and Southern California Edison (SCE) survey reports from the vicinity documenting golden eagle occurrence within the last 10 years (Katzner et al. 2012; Latta & Thelander 2013; SCE 2013; Trow 2014). Data from the BLM's DRECP was reviewed; this data represents nest locations recorded by various California state agencies and their contractors during 2008, 2010, 2012, and potentially other unknown time periods.

Literature reviewed for BLM Areas of Critical Environmental Concern (ACECs) included the adopted DRECP Land Use Plan Amendment (LUPA) (BLM 2016a) and the DRECP Draft EIR/EIS (BLM and CDFW 2014). As shown in Figure 2-3, four ACECs surround the Proposed Project area: the Northern Lucerne Wildlife Linkage ACEC to the east and west, Ord-Rodman ACEC to the east, and the Bendire's Thrasher ACEC and Granite Mountain Wildlife Linkage ACEC to the west.

Field Data Collection

Field surveys completed within the Proposed Project area included a general habitat assessment, vegetation mapping, a delineation of jurisdictional waters of the State (as regulated by California Department of Fish and Wildlife [CDFW]) and the Colorado River Basin Regional Water Quality Control Board [RWQCB]), and focused field surveys and assessments for special-status species. Appendix F, Biological Resources Technical Report (BRTR), summarizes the field surveys completed for the Proposed Project, including the SCE Calcite Facilities.

See Appendix F (BRTR) for details of specific biological survey methodologies and personnel.

4.3.1.1 Regional Setting

The Proposed Project would be located in the Lucerne Valley (see Section 2, Figures 2-1 and 2-2), where summers are hot, arid, and clear, from about June to September, and winters are cold, from about November to February. Typical temperatures vary from about 35°F to 97°F, rarely reaching below 28°F or above 103°F. The dry season lasts from about March to November, with wetter days the remainder of the year. Average rainfall is highest in February with accumulation of about 1.5 inches. Local rainfall records in the years preceding the biological field surveys are summarized in the BRTR (Appendix F).

Developed areas are located to the south and east of the Proposed Project area, including the cities of Apple Valley, Victorville, and the community of Lucerne Valley. State Route 247 (SR-247) runs north/south adjacent to the Proposed Project area; it is crossed twice by the proposed gen-tie line.

4.3.1.2 Environmental Setting of the Stagecoach Solar Generation Plant

<u>Vegetation</u>

Vegetation at the proposed solar generation plant is characteristic of desert scrub and desert wash habitats of the Mojave Desert. Several native desert vegetation types are mapped in the Proposed Project area (see Vegetation and Land Cover maps: Figure 4.3-1a, Figure 4.3-1b, and Figure 4.3-1c). Collectively, they can be categorized as Mojavean desert scrub. These shrublands are the dominant plant communities found mostly within the flat, low-lying portions of the Proposed Project area. The dominant vegetation community was creosote bush–white bursage scrub. Sparsely vegetated wash and creosote bush scrub were sub-dominant communities. Desert washes intermittently intersected with the entire survey area.

Detailed descriptions of vegetation communities at the solar generation plant are included in Appendix F. All vegetation types and land cover categories are listed below.

- Creosote bush–white bursage scrub (*Larrea tridentata–Ambrosia dumosa* Shrubland Alliance)
- Creosote bush scrub (*Larrea tridentata* Shrubland Alliance)
- Acton's and Virgin River brittle brush scrub (*Encelia actonii* Shrubland Alliance)
- Nevada joint fir scrub (*Ephedra nevadensis* Shrubland Alliance)
- Mojave yucca scrub (*Yucca schidigera* Shrubland Alliance)
- White bursage scrub (*Ambrosia dumosa* Shrubland Alliance)
- Allscale scrub (*Atriplex polycarpa* Shrubland Alliance)
- Joshua tree woodland (*Yucca brevifolia* Woodland Alliance)
- Sparsely vegetated washes
- Disturbed
- Developed

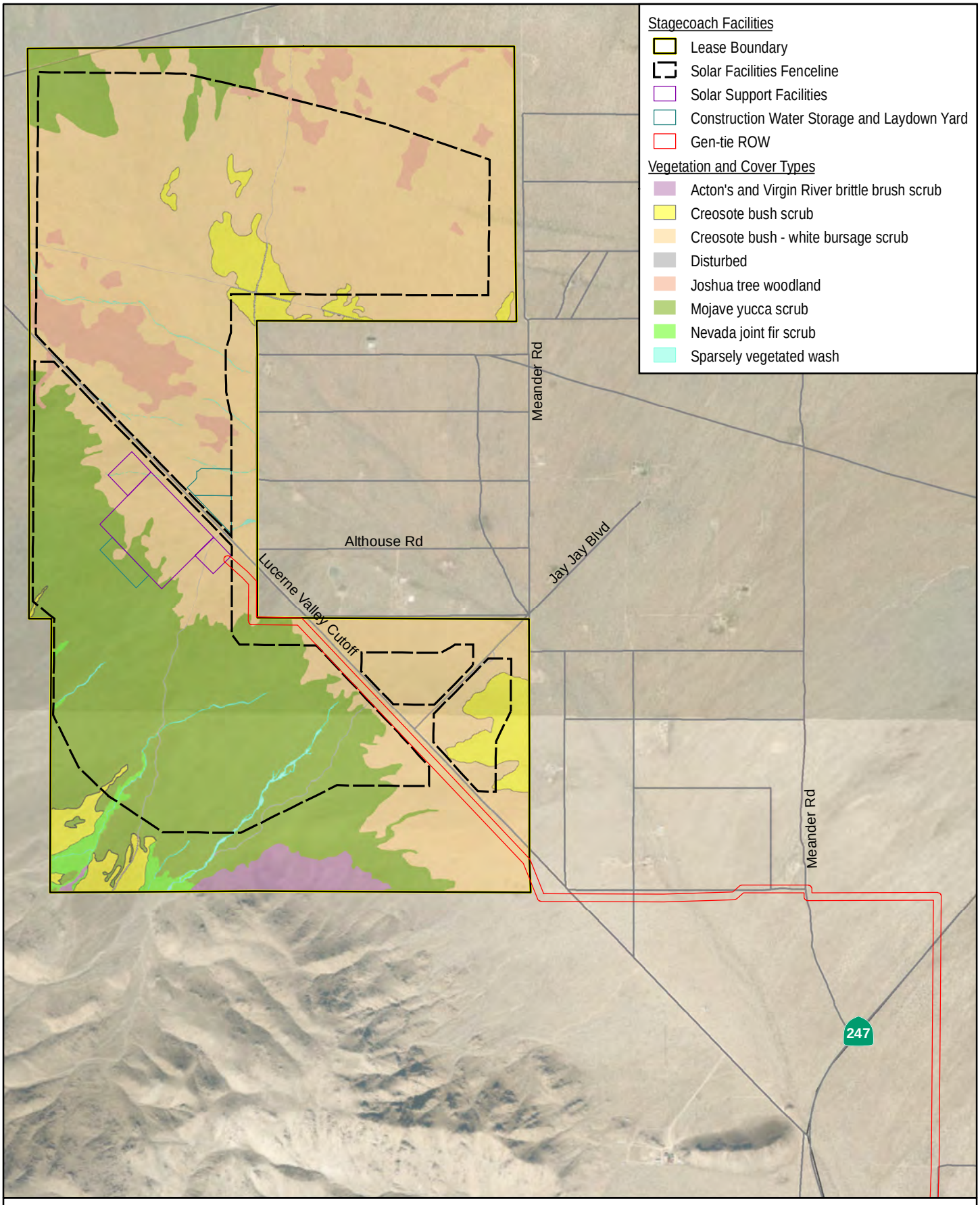


Figure 4.3-1a

Vegetation and Land Cover **(Solar Generation Plant)**

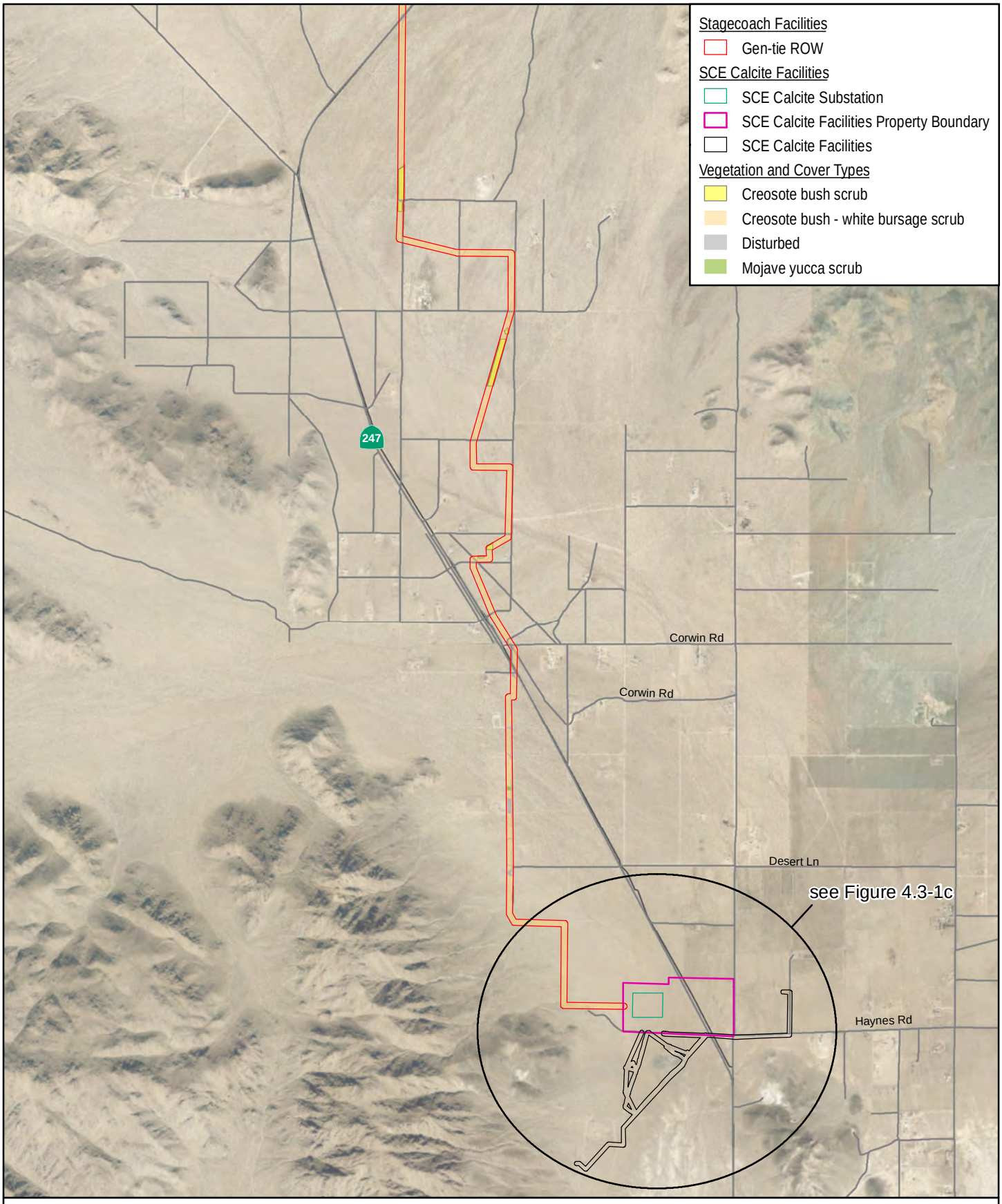


Figure 4.3-1b

Vegetation and Land Cover **(Gen-Tie Line)**

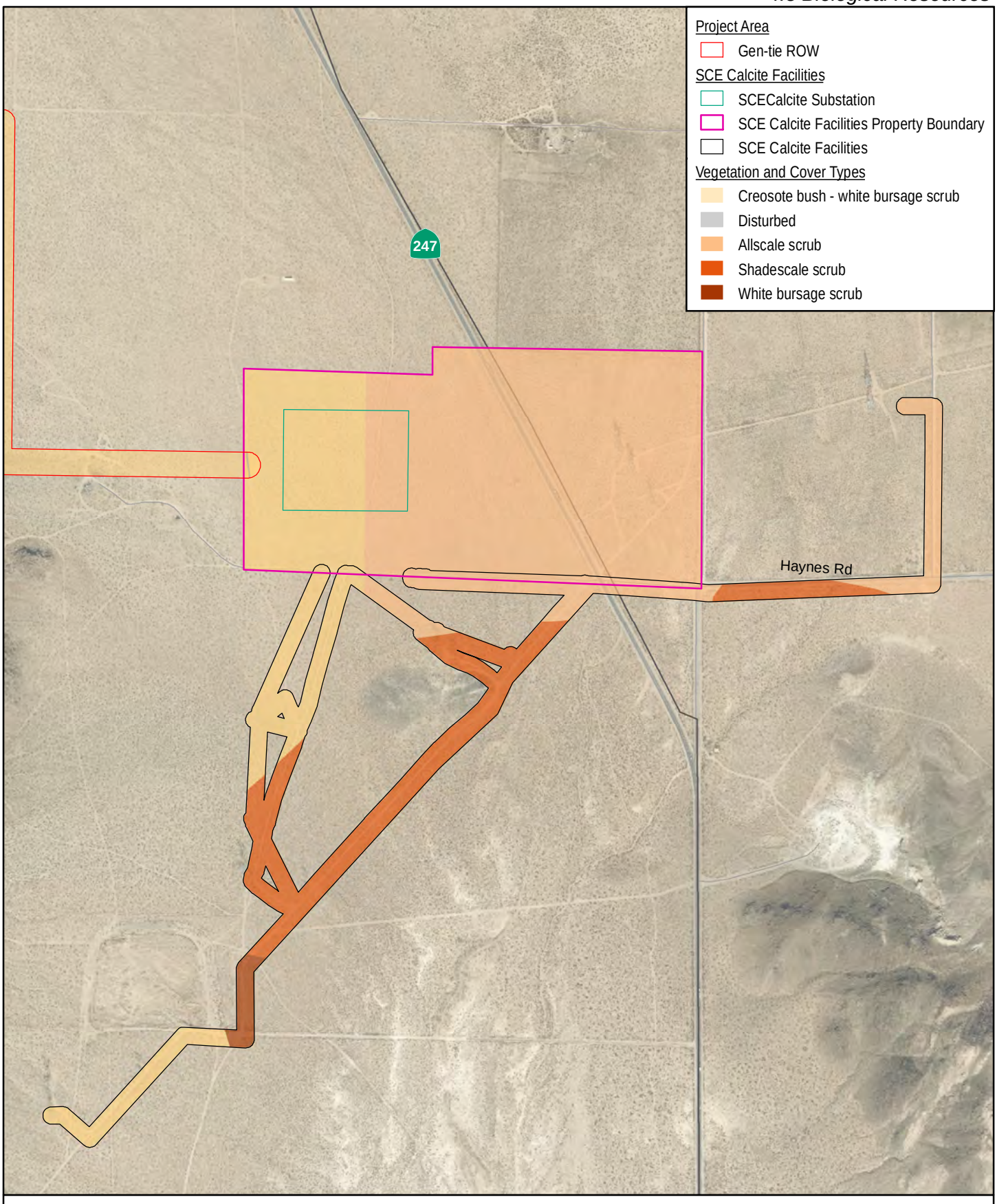


Figure 4.3-1c

Vegetation and Land Cover **(SCE Calcite Facilities)**

Sensitive Communities

The CDFW ranks Joshua tree woodland as S3 or "vulnerable" (CDFW 2019a). Additionally, the Joshua tree was recently identified as a candidate for State listing as threatened or endangered. Joshua trees are discussed under special-status plants, below. They are present in the sandy valley floor, primarily in the northern half of the Proposed Project area.

Jurisdictional Waters

Jurisdictional waters are described in detail in Appendix F. All the drainage features within the Proposed Project area are within the Lucerne Dry Lake. Although a federally defined ordinary high-water mark is often present, these washes are not regulated as waters of the U.S. because there is no surface water connection to interstate waters or to navigable waters (ECORP 2020). Features identified as an aquatic resource had physical evidence of flow including OHWM, defined bed and bank, presence of a natural line, the presence or absence of sediment deposits, litter/debris, and/or exposed roots indicating active hydrology within the channel. No wetlands are present.

At the proposed solar generation plant, aquatic resources that have been preliminarily determined to be regulated under the Porter-Cologne Act and California Fish and Game Code section 1602 include eleven features (Jurisdictional Waters are presented on Figure 4.3-2a, Figure 4.3-2b, and Figure 4.3-2c).

Special-status Species

The following categories of special-status species apply to plants and wildlife species in the Proposed Project area:

Federal designations: (Federal Endangered Species Act [ESA], U.S. Fish and Wildlife Service [USFWS], Bureau of Land Management [BLM]).

FT: Federally listed, threatened.

***State designations*:** (California Endangered Species Act [CESA], CDFW)

CT: State listed, threatened.

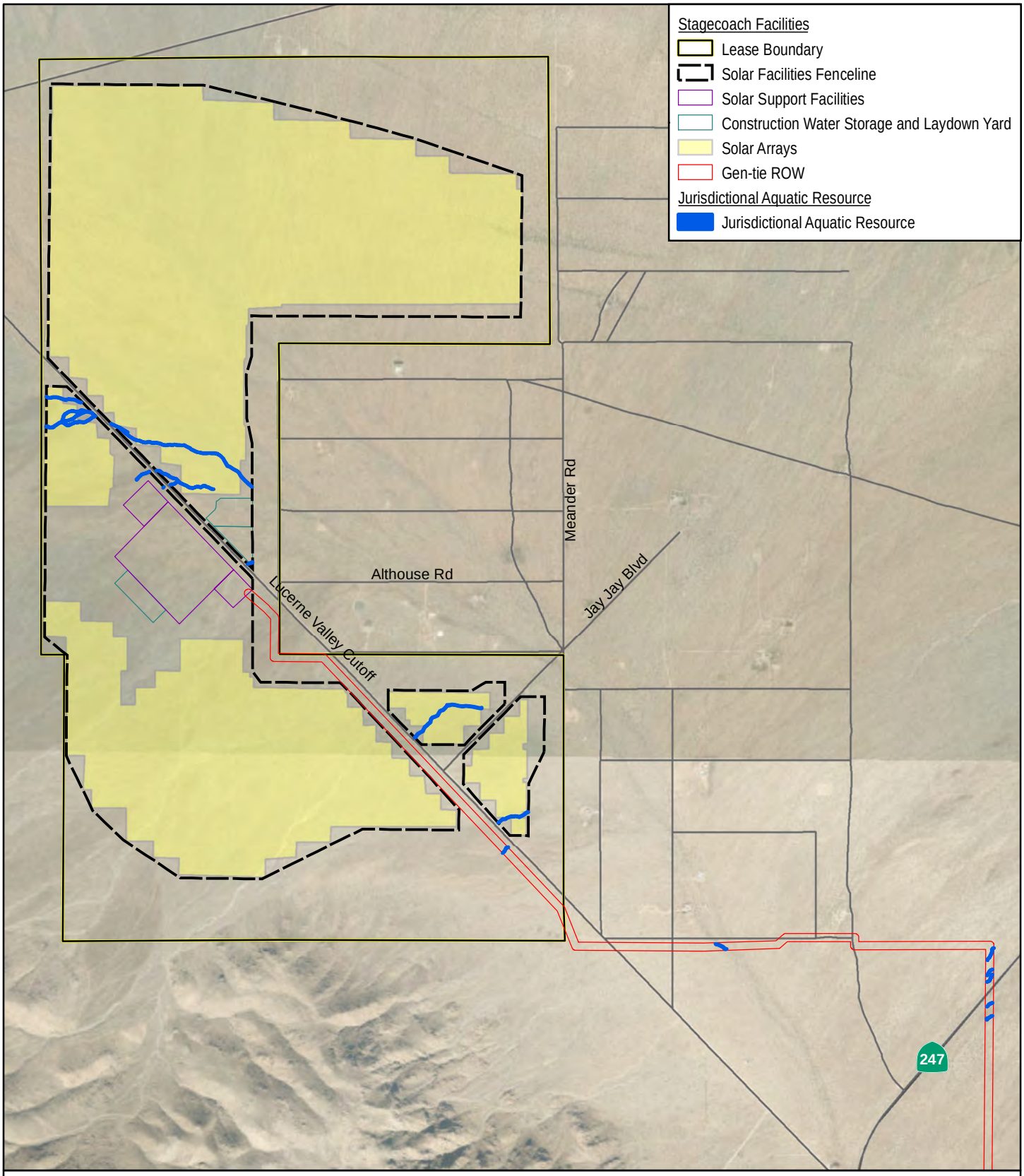
Cand.: Designated by the state Fish and Game Commission as a candidate for listing.

CSSC: California species of special concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.

FP: Fully protected. May not be taken or possessed.

SA: Special Animal

S3: 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 from the state.



Sources: ECORP, 2020

N

0.45 0 0.45 Miles

Figure 4.3-2a

Jurisdictional Waters **(Solar Generation Plant)**

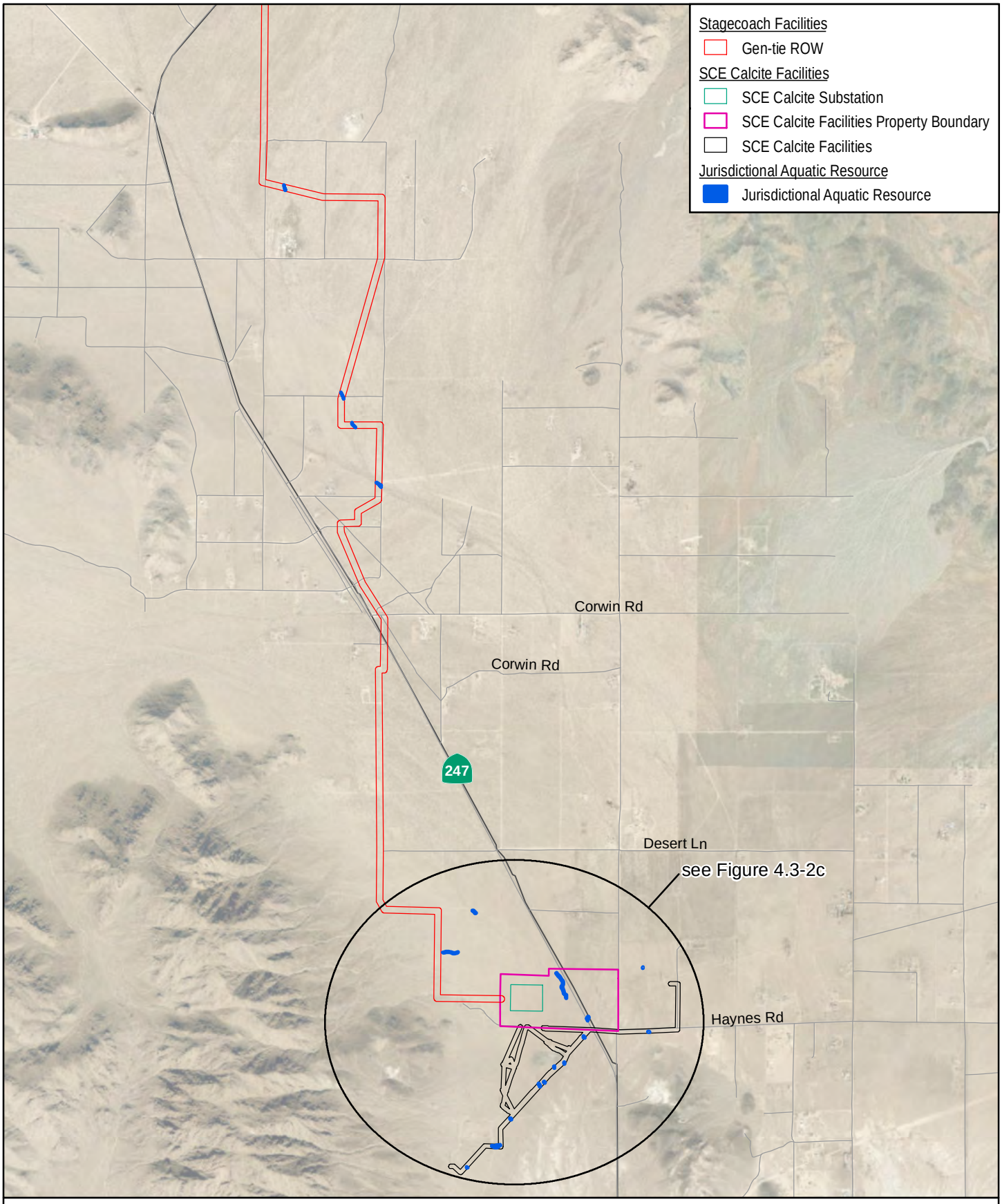
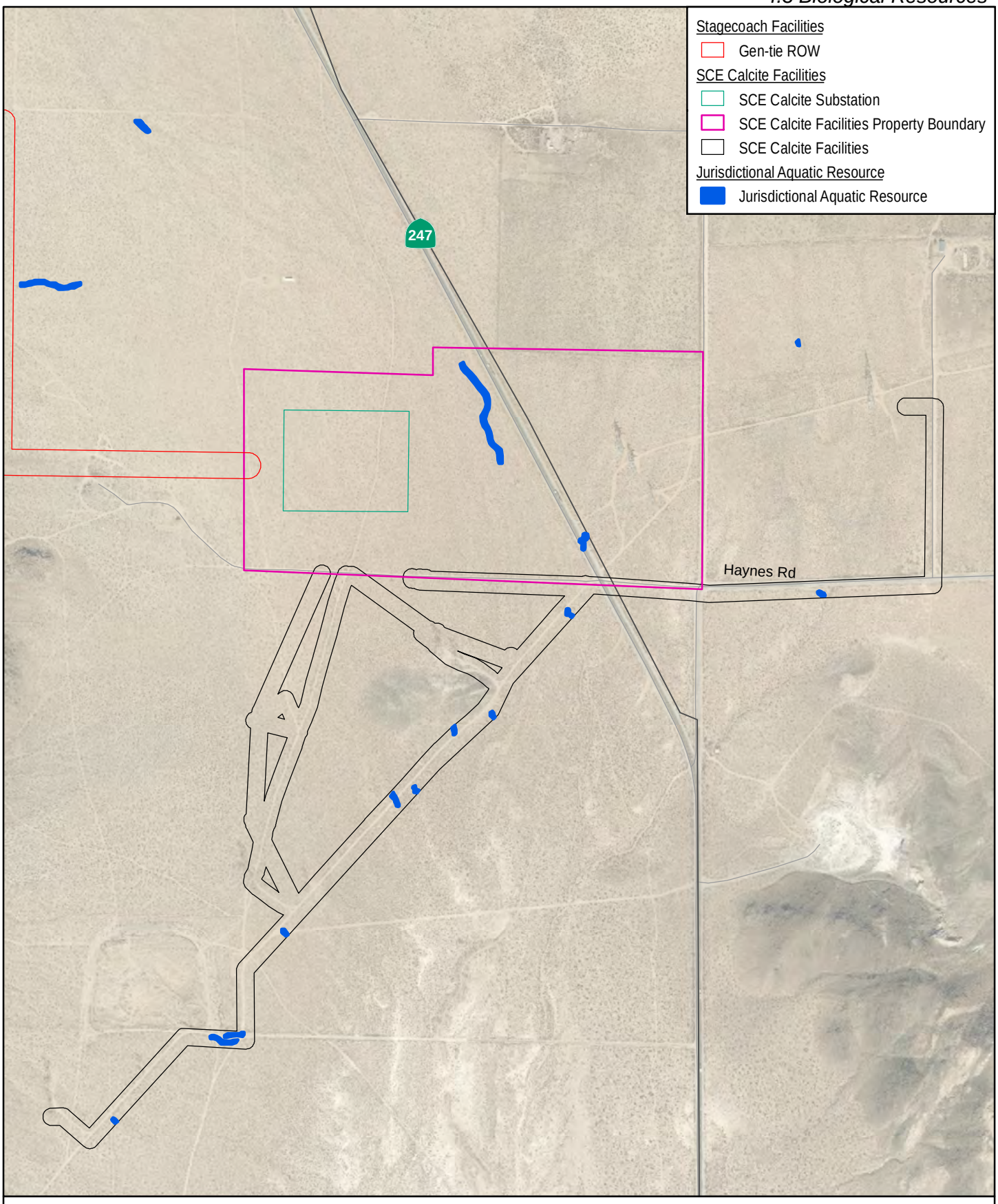


Figure 4.3-2b

Jurisdictional Waters **(Gen-tie Line)**



Sources: ECORP, 2020

N

1,000 0 1,000 Feet

Figure 4.3-2c

Jurisdictional Waters **(SCE Calcite Facilities)**

California Rare Plant Rank designations.

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 we need more information; a review list.

4: Plants of limited distribution; a watch list.

California Rare Plant Rank Threat designations:

1 Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)

2 Fairly endangered in California (20–80 percent of occurrences threatened)

3 Not very endangered in California (<20 percent of occurrences threatened or no current threats known)

Definitions of occurrence probability: Estimated occurrence probabilities are based on literature sources cited earlier and field surveys and habitat analyses reported here.

Present: Observed on the site by qualified biologists.

High: Habitat is a type often utilized by the species and the site is within the known range of the species.

Moderate: Site is within the known range of the species and habitat on the site is a type occasionally used.

Low: Site is within the species' known range but habitat is rarely used, or the species was not found during focused surveys covering less than 100 percent of potential habitat or completed in marginal seasons.

Minimal: No suitable habitat on the site; or well outside the species' known elevational or geographic ranges; or a focused study covering 100 percent of all suitable habitat, completed during the appropriate season and during a year of appropriate rainfall, did not detect the species.

Unknown: No focused surveys have been performed in the region, and the species' distribution *and* habitat are poorly known.

Plants

Descriptions of all special-status plants and their occurrence probability at the Proposed Project area are included in the BRTR (Appendix F). No federally listed plant species have potential to occur. One candidate for State listing, western Joshua tree, is present in the Proposed Project area (Special-status Plants presented on Figure 4.3-3a and Figure 4.3-3b). Joshua trees are endemic to the Mojave Desert and are an integral component of the ecosystem, providing an important food source, nesting habitat, shelter from wind and sun, and habitat for small mammals, birds, reptiles, insects, and spiders. Because they require a cold period to flower, they are particularly vulnerable to climate change.

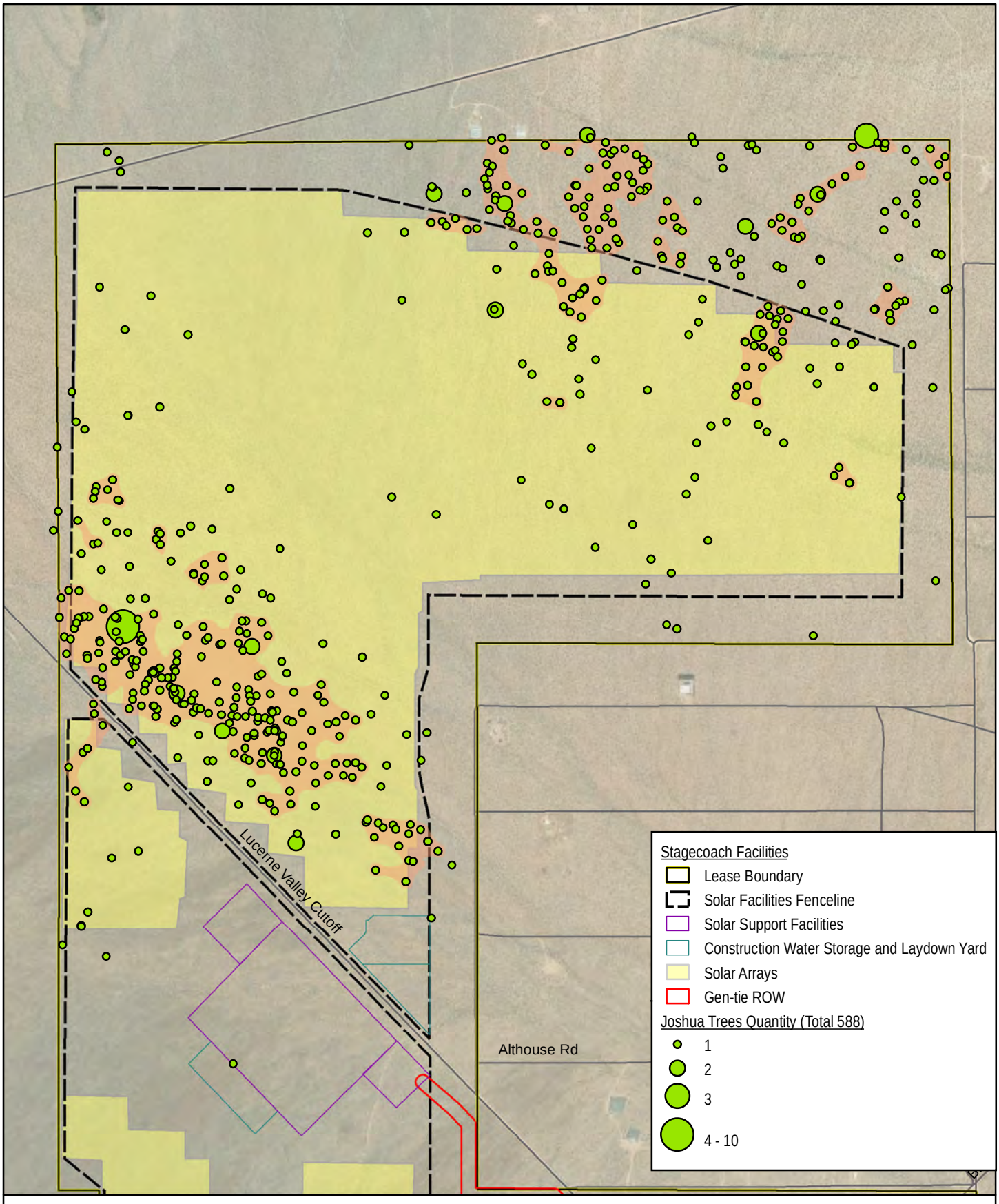


Figure 4.3-3a

Special-status Plants **(Solar Generation Plant)**

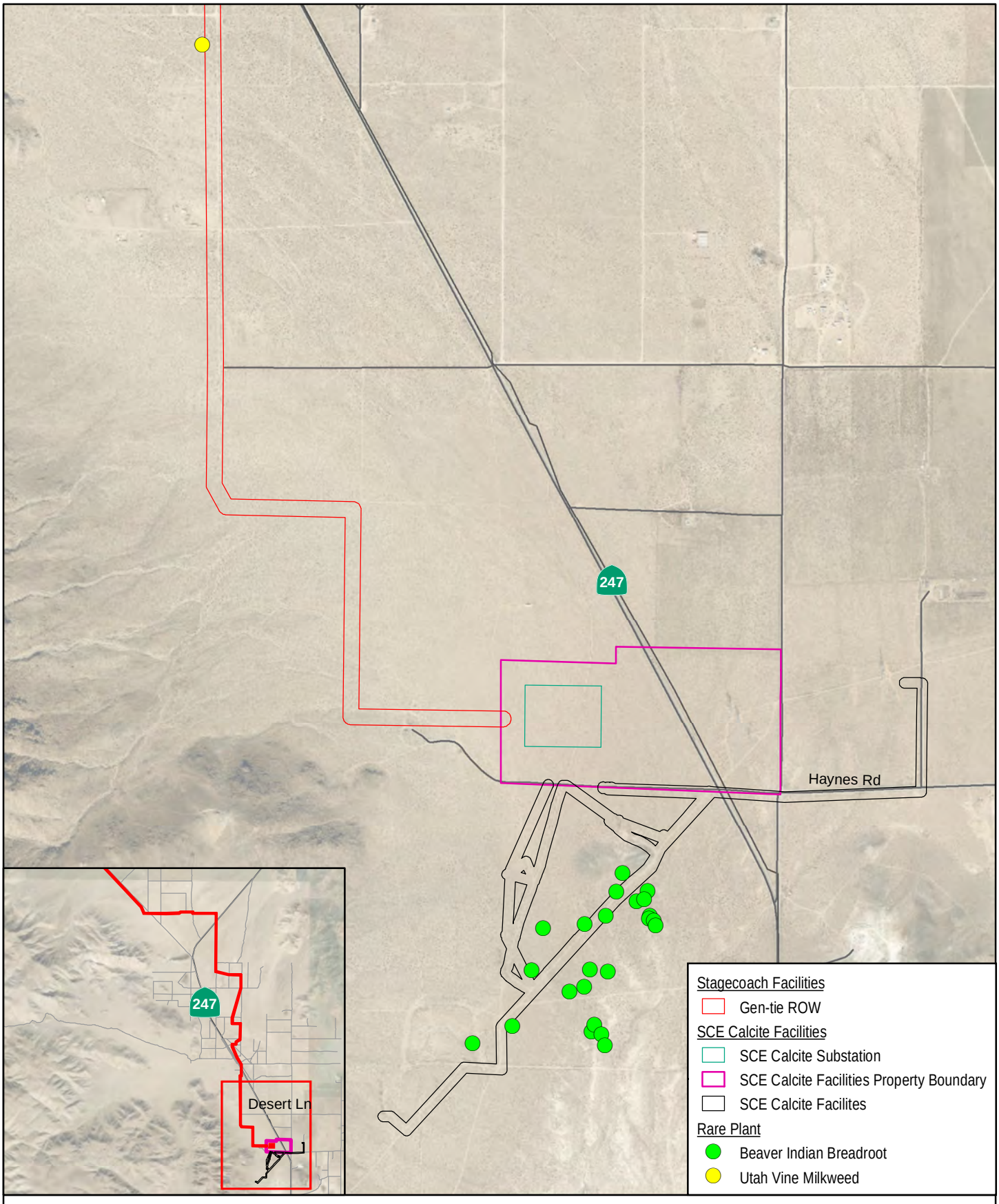


Figure 4.3-3b

Special-status Plants **(SCE Calcite Facilities)**

All special-status plants that are present or have moderate to high potential to occur are presented in the list below (see also maps of special-status plants: Figures 4.3-3a and Figure 4.3-3b). Due to the seasonality of plant occurrences and dependence on fluctuations in annual rainfall, special-status plants not observed, but with potential to occur, may be present as dormant seed, bulbs, or below-ground rootstocks within Proposed Project footprint sites. Other species occurring in the surrounding area are not expected to occur on the site due to habitat, geographic range, elevational range, and field survey results.

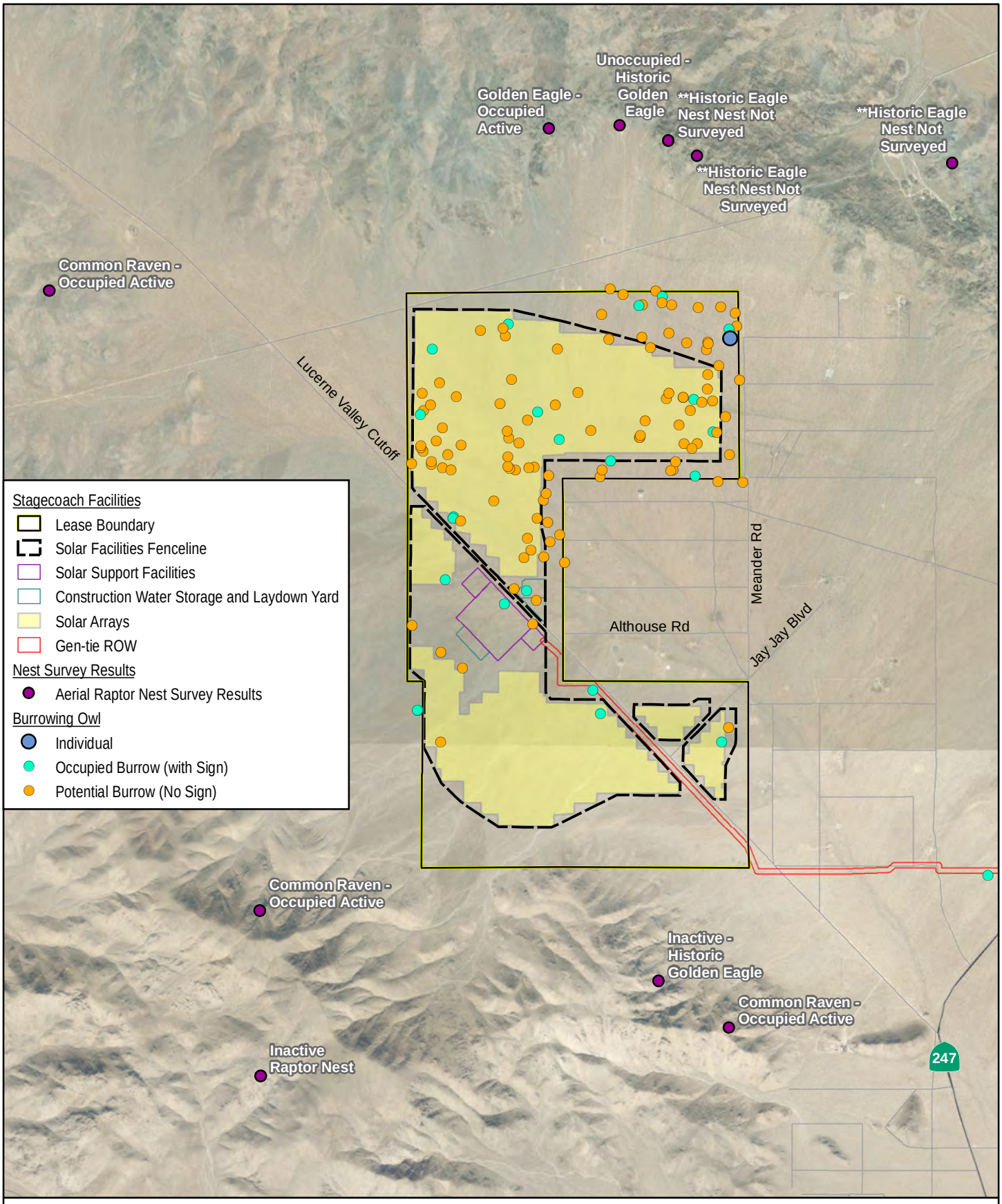
- White pygmy-poppy (*Canbya candida,* CPRP 4.2) (moderate)
- Mojave monkeyflower (*Mimulus mohavensis,* CRPR 1B.2) (moderate)
- Crowned muilla (*Muilla coronata,* CRPR 4.2) (low to moderate)
- Western Joshua tree (*Yucca brevidifolia*, CT cand.) (present)

Wildlife

One state and federally listed species, desert tortoise, occurs in the Proposed Project area. Additionally, the State-listed Swainson's hawk was observed as a migratory season flyover, although the site is well outside its breeding and wintering range. Descriptions of special-status species and their occurrence probability are included in Appendix F.

The special-status wildlife species in the following list are present or have at least a moderate potential to occur in the Proposed Project area (Special-status Wildlife are presented on Figure 4.3-4a, Figure 4.3-4b, Figure 4.3-4c, Figure 4.3-4d, and Figure 4.3-4e).

- Desert tortoise (*Gopherus agassizii*, FT, CT) (present)
- Rosy boa (*Lichanura trivirgata roseofusca*, SA) (high)
- Golden eagle (*Aquila chrysaetos*, BGEPA, FP) (present, foraging)
- Burrowing owl (*Athene cunicularia*, CCSC) (present)
- Swainson's hawk (*Buteo swainsoni*, CT) (present, migration)
- Prairie falcon (*Falco mexicanus,* CCSC) (high, foraging)
- Peregrine falcon (*Falco peregrinus,* FP) (present, foraging)
- Loggerhead shrike (*Lanius ludovicianus,* CCSC) (present)
- Bendire's thrasher (*Toxostoma bendirei,* CCSC, BLM S) (moderate)
- Le Conte's thrasher (*Toxostoma lecontei,* CCSC) (present)
- Pallid San Diego pocket mouse (*Chaetodipus fallax allidus,* CCSC) (moderate)
- Townsend's big-eared bat (*Corynorhinus townsendii,* CCSC) (moderate, foraging)
- Western mastiff bat (*Eumops perotis californicus,* CCSC) (moderate, roosting/foraging)
- American badger (*Taxidea taxus,* CCSC) (present)
- Desert kit fox (*Vulpes macrotis arsipus,* protected fur-bearing mammal) (present)



Sources: Aspen, 2020; Katzner, 2020; Latta & Thelander, 2012; BLM, 2012; BRC, 2012 & 2014

N

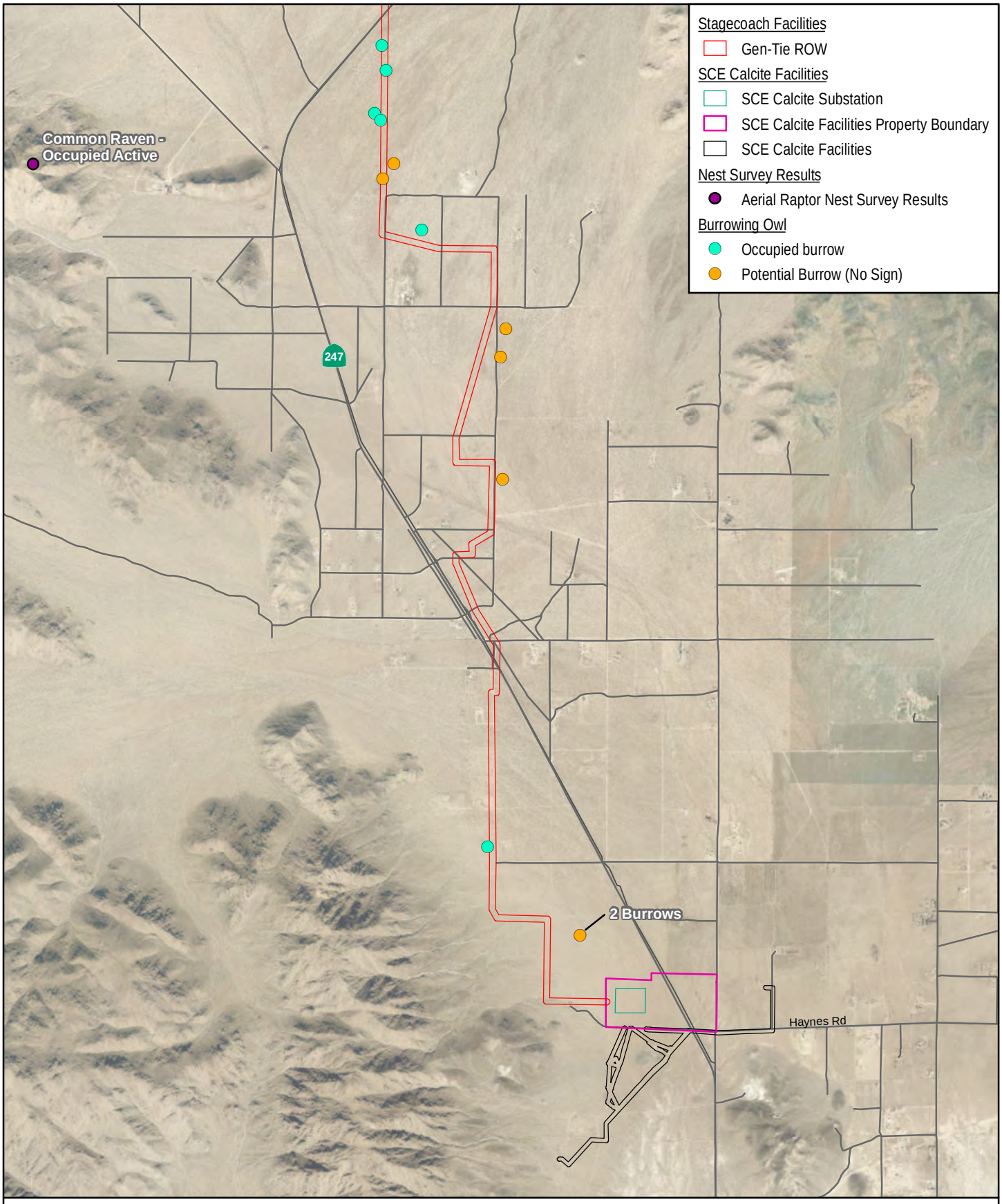
**nest within bighorn exclusion zone

1,000 0 1,000

Feet

Figure 4.3-4a

Special-status Wildlife: Avian Observations **(Solar Generation Plant)**



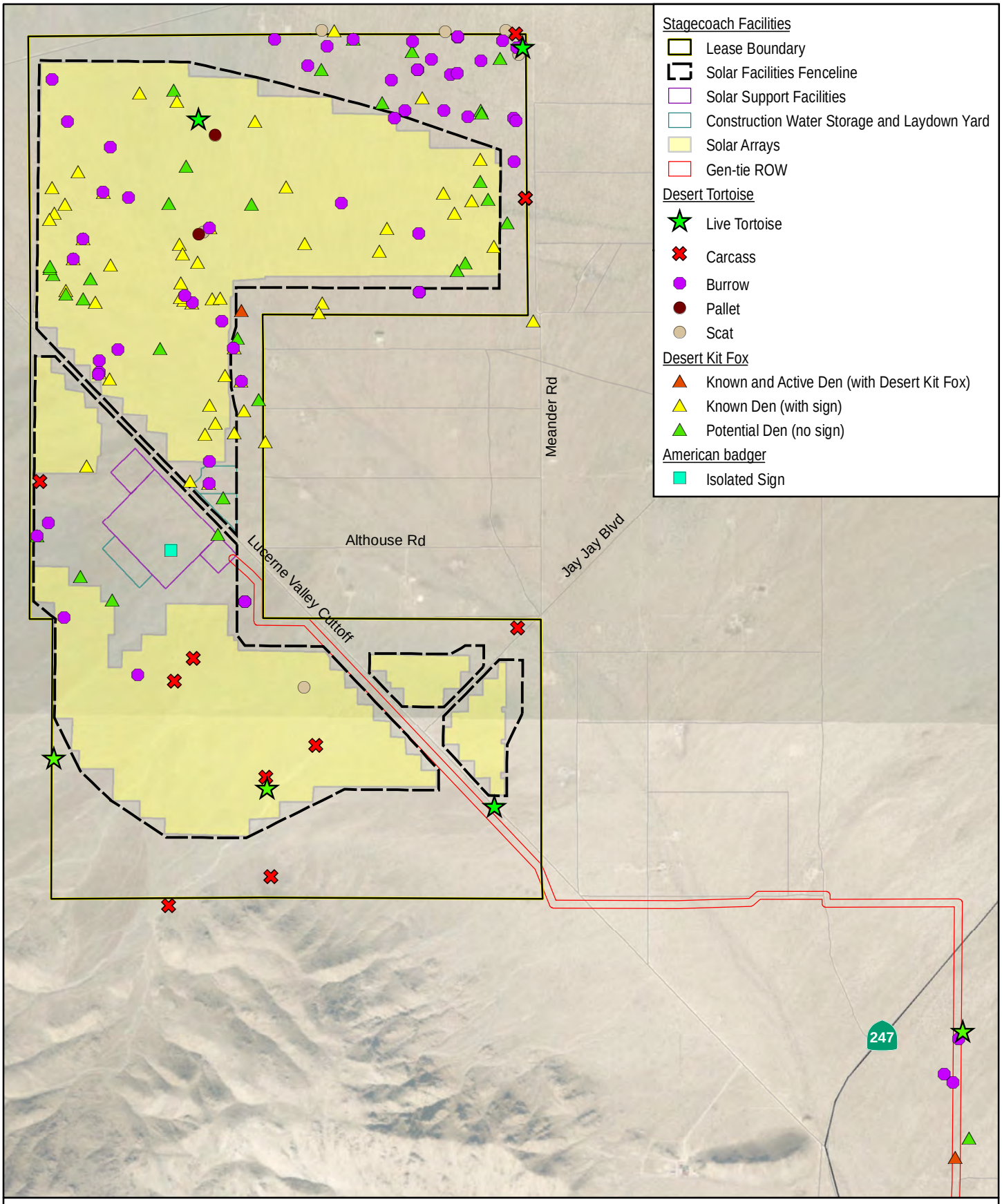
Sources: Katzner, 2020; Latta & Thelander, 2012; BLM, 2012; BRC, 2012 & 2014

N

1,000 0 1,000 Feet

Figure 4.3-4b

Special-status Wildlife: Avian Observations **(Gen-tie Line)**



Sources: Aspen, 2017 & 2020

N

1,000 0 1,000 Feet

Figure 4.3-4c

Special-status Wildlife:
Reptile and Mammal Observations **(Solar Generation Plant)**

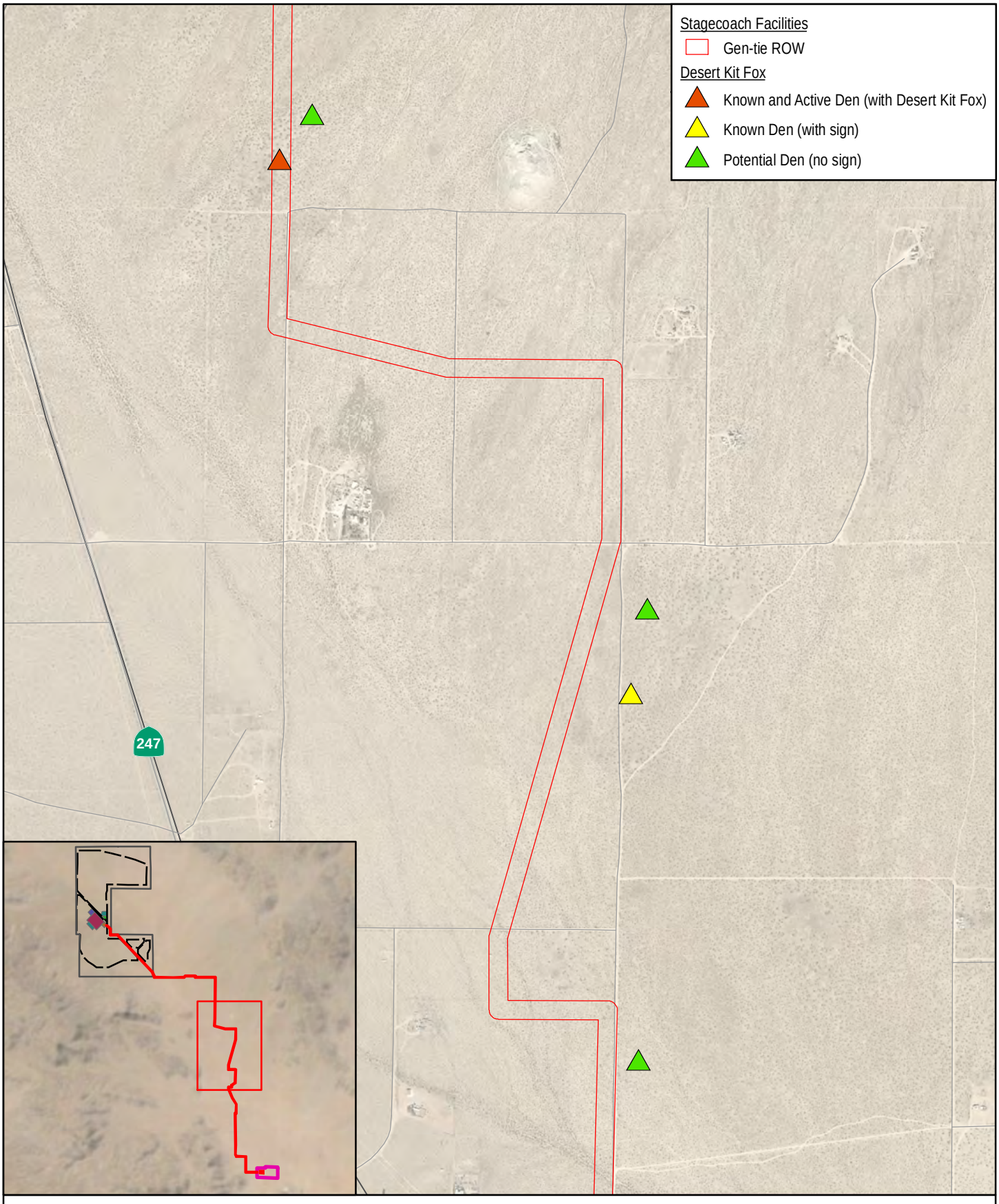


Figure 4.3-4d

Special-status Wildlife:
Reptile and Mammal Observations **(Gen-tie Line)**

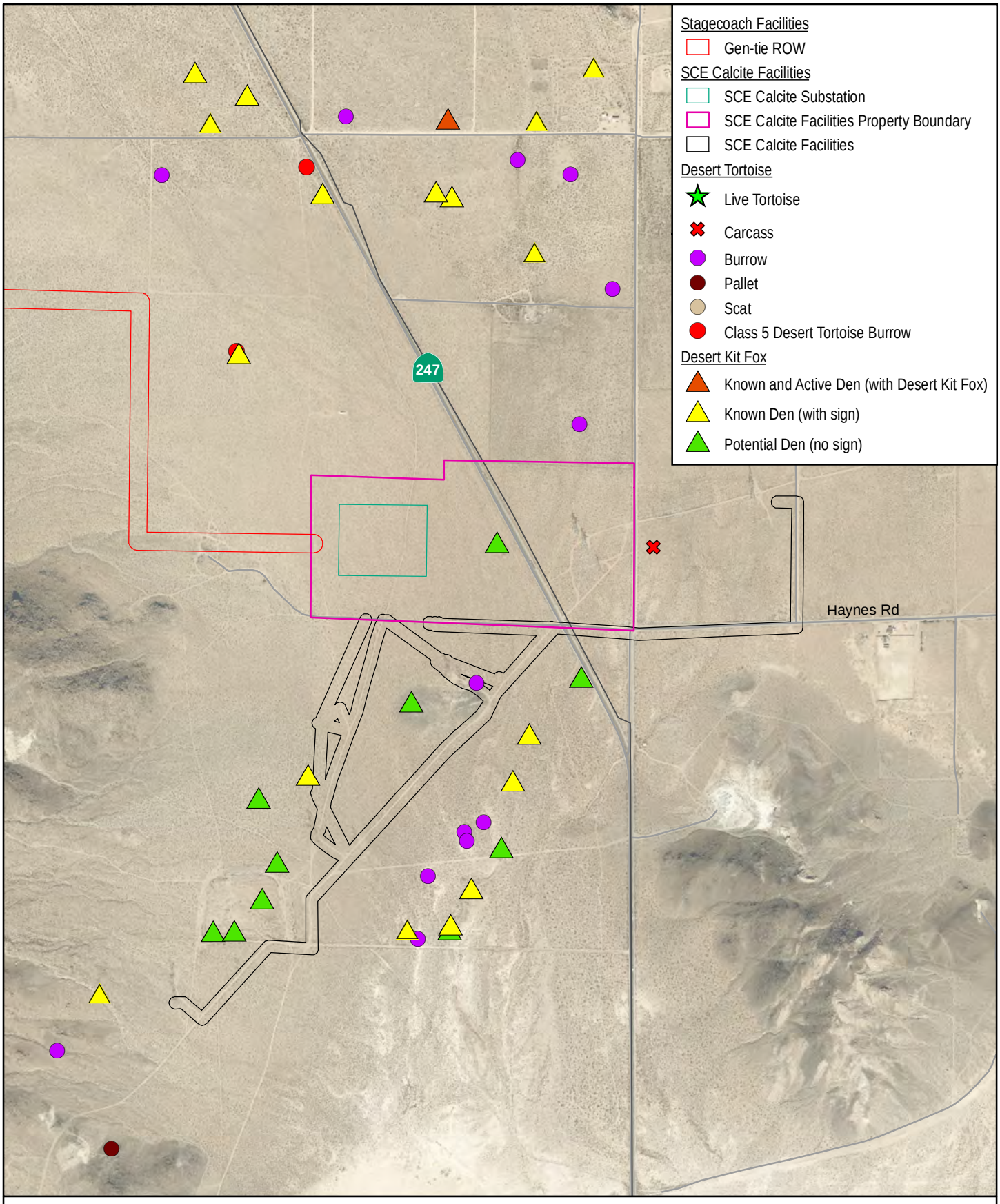


Figure 4.3-4e

Special-status Wildlife:
Reptile and Mammal Observations: **SCE Calcite Facilities**

In addition to the species listed above, several special-status raptors were not observed but are likely to winter in the region and may be present in the Proposed Project area during this time. These are: ferruginous hawk (*Buteo regalis)*, sharp-shinned hawk (*Accipiter striatus)*, northern harrier (*Circus hudsonius)*, short-eared owl (*Asio flammeus)*, and merlin (*Falco columbarius)*.

Observations of desert tortoises and their sign are described in the BRTR (Appendix F) and shown on Figure 4.3-4a, Figure 4.3-4b, Figure 4.3-4c, Figure 4.3-4d, and Figure 4.3-4e. The entire Proposed Project site is suitable habitat for desert tortoise. The moderately sloping alluvial slopes toward the northern and western parts of the site are ideal habitat, while the steeper rocky hills to the southwest and the flat and silty saltbush scrub are expected to support fewer tortoises. Localized vegetation conditions, shelter availability (e.g., soil suitability for burrowing, or shade beneath rocks and shrubs), and slope exposure (which affects localized ground temperatures) would affect desert tortoise habitat suitability throughout the site. Predicted desert tortoise occupancy (Nussear 2009) is high in the Proposed Project area, as shown on Figure 4.3-5.

Nelson's bighorn sheep (*Ovis canadensis nelson,* California FP) have been historically documented in the San Gorgonio Mountains to the south of the Proposed Project site and in the Newberry and Ord Mountains to the northeast/east of the Proposed Project site. The CDFW's Desert Bighorn Sheep Status Report (2018) documented movement of bighorn sheep between mountain ranges in southern California. The surveys showed bighorn sheep moving between the Newberry and Ord Mountains, which was historically a small and isolated population, and the Bullion Mountains to the east of the Proposed Project site (CDFW 2018). Bighorn sheep use a variety of desert terrain types, such as valley floors and less steep and rugged areas with greater availability of vegetation, which may be used for movement between mountain ranges and as important foraging areas (Bleich et al. 1997). They have not been documented on the site, but they may travel across the valley infrequently, as a part of dispersal among subpopulations in other mountain ranges. There is low potential for bighorn sheep to use the site.

Critical Habitat

No U.S. Fish and Wildlife Service (USFWS) designated critical habitat for threatened or endangered species is found within the proposed solar generation plant. The Ord-Rodman Unit of Critical Habitat for desert tortoise is located within 3 miles east of the Proposed Project area, east of SR-247 (Figure 4.3-5, Desert Tortoise Critical Habitat and Predicted Density).

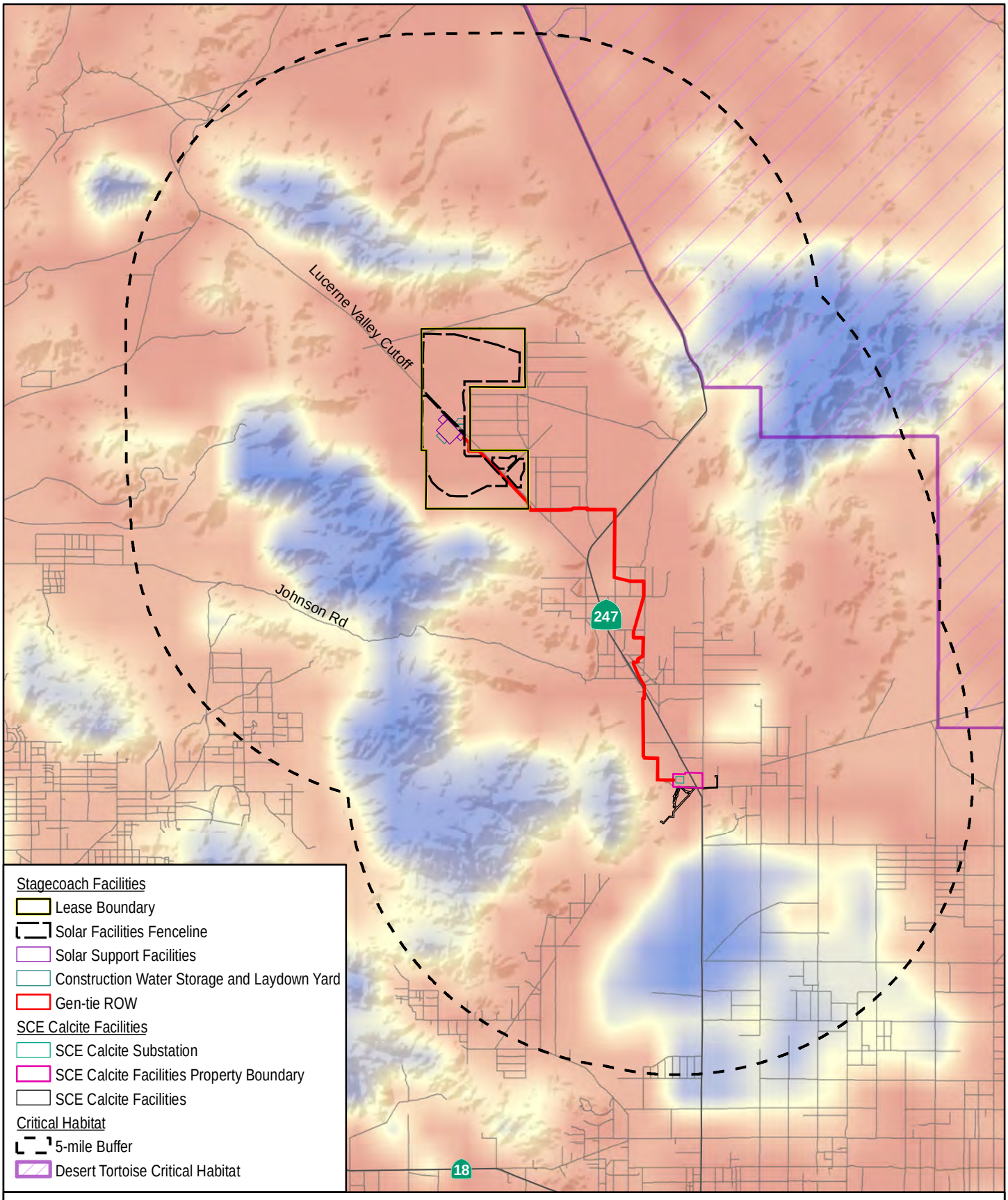


Figure 4.3-5

Desert Tortoise
Critical Habitat and Predicted Density

Wildlife Movement

Wildlife migration corridors and movement routes are areas that connect suitable habitat in a region that may otherwise be fragmented by human disturbance, difficult terrain, or unsuitable vegetation. Natural features, including drainages, ridgelines, or contiguous natural habitat may provide routes or corridors for wildlife movement. Wildlife movement routes are critical to survival and reproduction for wildlife populations, as they provide expanded access to mates, food, and water across broad geographic areas; allow for dispersal from high-density areas; and facilitate gene flow among populations.

The Proposed Project area (including the proposed solar field, the gen-tie route, and the SCE Calcite Facilities) extends along approximately 10 miles between the Sidewinder and White Horse Mountains and the West Ord Mountains and Stoddard Ridge. The lands surrounding the Lucerne Valley are largely undeveloped open space administered by the BLM, with some scattered rural housing on private land in the central parts of the valley.

SR-247 may present a hazard to desert tortoise and other wildlife movement across the 2-lane road, where they may be subject to vehicle strikes. There are no other substantial barriers to wildlife movement in the vicinity.

The California Essential Habitat Connectivity (CEHC) Project identified Natural Landscape Blocks as large, relatively natural habitat blocks that support native diversity. Essential Connectivity Areas are areas essential for ecological connectivity between them. Essential Connectivity areas are located adjacent to the Proposed Project area north in Stoddard Valley, east in the Ord Mountains, and south in the San Bernardino Mountains. These areas, as well as a portion of the Granite Mountains to the west, were identified as Natural Landscape Blocks (Spencer et al. 2010) (Figure 4.3-6, Wildlife Movement).

Desert Tortoise Habitat Linkages (Averill-Murray et al. 2013) were identified to connect Tortoise Conservation Areas (TCAs) from the USFWS 2011 Recovery Plan, which include critical habitat, ACECs, and National Park Units. The Proposed Project area and vicinity was within a modeled least-cost corridor between TCAs (Ord-Rodman CHU and Fremont-Kramer CHU). Tortoise populations adjacent to and contiguous with populations within TCAs are essential for long-term species viability and recovery (Averill-Murray 2021).

The California Desert Connectivity Project identified a Desert Linkage Network (Penrod et al. 2012) to maintain habitat for movement between landscape blocks for a diversity of focal plant and wildlife species, including desert tortoise, badger, kit fox, bighorn sheep, burrowing owl, loggerhead shrike, and LeConte’s thrasher. The Proposed Project area and vicinity are shown within the modeled linkage network.

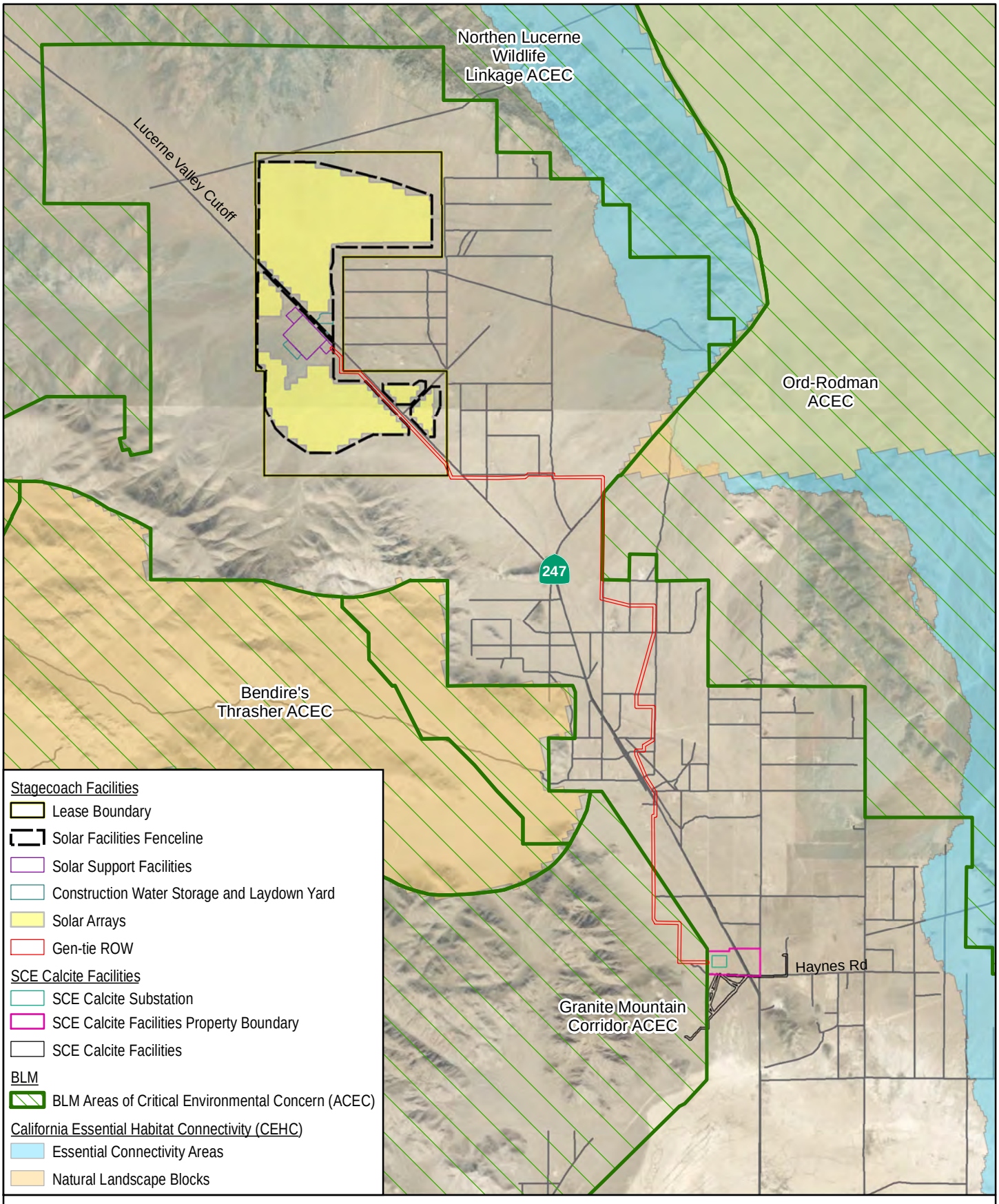


Figure 4.3-6

Wildlife Movement

BLM ACECs are areas where special management attention is given to protect important natural or cultural/historical resources, including fish and wildlife resources and wildlife connectivity. Four ACECs surround the Proposed Project area (Figure 4.3-6, Wildlife Movement). These ACECs were established by BLM in part to protect wildlife habitat and regional habitat linkage, and management policies for each of them prioritizes wildlife connectivity. The ACECs are:

- Northern Lucerne Wildlife Linkage ACEC is located to the northeast and west of the site. It is approximately 21,900 acres, supports wildlife assemblages and major populations of rare and sensitive plants, and provides critical inks for wildlife populations to the north and south
- Ord-Rodman ACEC is to the east. It is located on approximately 204,860 acres and provides high density desert tortoise habitat capable of sustaining viable tortoise populations and the highest value critical habitat.
- Bendire's Thrasher ACEC is to the southwest. It is approximately 9,780 acres and provides habitat for a disjunct population of Bendire's thrasher.
- Granite Mountain Wildlife Linkage ACEC is primarily south of the Proposed Project area. It is located on approximately 39,290 acres and provides critical links for wildlife populations to the north and south of the area, including bighorn sheep, golden eagles, desert tortoise, and prairie falcons, and sensitive plants including Joshua tree.

Non-federal lands, including the solar generation plant site, are not subject to BLM ACEC management goals. SR-247 passes through the Proposed Project area, crossing the proposed gen-tie route at its northern and southern ends. This highway may create a hazard for some wildlife moving between undisturbed native vegetation on either side of the road.

4.3.1.3 Environmental Setting of the Stagecoach Gen-tie Line

Vegetation

Vegetation along the proposed gen-tie route is characteristic of desert scrub and desert wash habitats of the Mojave Desert (Vegetation and Land Cover is illustrated on Figure 4.3-1a, Figure 4.3-1b, and Figure 4.3-1c). Detailed descriptions of the following vegetation communities are included in Appendix F:

- Creosote bush–white bursage scrub
- Creosote bush scrub
- Mojave yucca scrub
- Disturbed

Sensitive Communities

No sensitive vegetation communities were mapped along the proposed gen-tie route.

Jurisdictional Waters

As discussed for the proposed solar generation plant, all drainage features on the proposed gen-tie route drain to Lucerne Dry Lake and are not regulated as waters of the U.S. (ECORP 2020). There are eight dry streambed features along the proposed gen-tie route that appear to meet jurisdictional criteria under the Porter-Cologne Act and California Fish and Game Code section 1602 (Jurisdictional Waters are illustrated on Figure 4.3-2a, Figure 4.3-2b, and Figure 4.3-2c). No wetlands are present.

Special-status Species

Plants

No state or federally listed plant species have potential to occur on the proposed gen-tie route. No western Joshua trees were seen along the proposed gen-tie route, although some parts of the proposed or alternate routes were not accessible to the field team, so a conclusive “absent” statement cannot be made. Special-status plant species potentially occurring along the gen-tie route with at least moderate probability are presented in the following list, and are described further in Appendix F (Special-status Plants are illustrated on Figure 4.3-3a and Figure 4.3-3b).

- White pygmy-poppy (CPRP 4.2[2]) (moderate)
- Mojave monkeyflower (CRPR 1B.2) (moderate)
- Crowned muilla (CRPR 4.2) (low to moderate)
- Western Joshua tree (CT candidate) (not expected)
- Utah vine milkweed (*Funastrum utahense*, CRPR 4.2) (present)

Wildlife

One federally and State listed threatened species, desert tortoise, is present. One State listed threatened species, Swainson’s hawk, is present during migration. Additional special-status wildlife species that are present or have at least a moderate potential to occur are presented in the following list and described in in detail in Appendix F (Special-status Wildlife is illustrated on Figure 4.3-4a, Figure 4.3-4b, Figure 4.3-4c, Figure 4.3-4d, and Figure 4.3-4e). Additionally, several special-status raptors were not observed but are likely to winter in the region and may be present in the Proposed Project area during this time. These are: ferruginous hawk, sharp-shinned hawk, northern harrier, short-eared owl, and merlin.

- Desert tortoise (FT, CT) (present)
- Rosy boa (SA) (high)

- Golden eagle (BGEPA, FP) (present, foraging)
- Burrowing owl (CCSC) (present)
- Swainson's hawk (CT) (present, migration)
- Prairie falcon (CCSC) (high, foraging)
- Peregrine falcon (FP) (present, foraging)
- Loggerhead shrike (CCSC) (present)
- Bendire's thrasher (CCSC, BLM S) (moderate)
- Le Conte's thrasher (CCSC) (present)
- Pallid San Diego pocket mouse (CCSC) (moderate)
- Townsend's big-eared bat (CCSC) (moderate, foraging)
- Western mastiff bat (CCSC) (moderate, roosting/foraging)
- American badger (CCSC) (present)
- Desert kit fox (FP [protected fur-bearing mammal]) (present)

Critical Habitat

There is no USFWS designated critical habitat along the proposed or alternate gen-tie routes. The nearest critical habitat is the Ord-Rodman Unit for desert tortoise, located within 3 miles east of the gen-tie line, east of SR-247.

Wildlife Movement

Local wildlife movement habitat, including nearby Essential Connectivity Areas, Natural Landscape Blocks, and BLM ACECs are described above, for the proposed solar generation plant. The northern portion of the proposed gen-tie line abuts the Ord-Rodman ACEC. The southern end of the route crosses private land that adjoins the Granite Mountain Wildlife Linkage ACEC on its west side (Figure 4.3-6, Wildlife Movement). No part of the proposed gen-tie route is subject to BLM ACEC management.

4.3.1.4 Environmental Setting of the SCE Calcite Facilities

Vegetation

Vegetation within the proposed SCE Calcite Facilities area is characteristic of desert scrub habitats of the Mojave Desert. The vegetation communities are presented in the following list and shown in Figure 4.3-1a, Figure 4.3-1b, and Figure 4.3-1c (Vegetation and Land Cover). Detailed descriptions of each vegetation community are included in Appendix F (BRTR).

- Allscale scrub
- Creosote bush–white bursage scrub
- White bursage scrub
- Shadescale scrub
- Developed

Sensitive Communities

No sensitive vegetation communities were mapped within the SCE Calcite Facilities area.

Jurisdictional Waters

The proposed SCE Calcite Facilities area crosses numerous ephemeral drainages of varying size typical of the Mojave Desert, similar to those described above for the proposed solar generation plant site. They generally flow towards Lucerne Dry Lake. Sixteen drainages were delineated with potentially jurisdictional non-wetland waters subject to the jurisdiction of the Regional Water Quality Control Board (RWQCB) and potential streambeds subject to the jurisdiction of the CDFW pursuant to the California Fish and Game Code (BRC 2016g) (Figures 4.3-2a, 4.3-2b, and 4.3-2c, Jurisdictional Waters). As discussed for the solar generation plant, these washes are not federally jurisdictional due to the Lucerne Dry Lake closed drainage basin without surface water connection to interstate waters or navigable waters. No wetlands are present.

Special-status Species

Plants

No state or federally listed plant species have potential to occur in the SCE Calcite Facilities area. Special-status plant species present or potentially occurring with at least moderate probability are presented in the following list, and described in detail in Appendix F (BRTR) (Figure 4.3-3a and Figure 4.3-3b, Special-status Plants). Although the rare plant survey report for the SCE Calcite Facilities concluded a likely occurrence potential for white pygmy-poppy, Clokey's cryptantha (*Cryptantha clokeyi)*, purple-nerve cymopterus (*Cymopterus multinervatus*), and Parish's popcornflower (*Plagiobothrys parishii*) within suitable habitat, there is no suitable habitat on the proposed SCE Calcite Facilities site and these species are not expected to occur. Note that habitat on the proposed and alternate SCE Calcite Facilities sites is sandy lower bajada or desert floor, with no rocky hillsides, wetlands, or seeps that could support these plants.

- Borrego milk-vetch (*Astragalus lentiginosus var. Borreganus*, CRPR 4.3) (present)
- White pygmy-poppy (CPRP 4.2) (not expected / high in suitable habitat only)
- Clokey's cryptantha (CRPR 1B.2) (not expected / high in suitable habitat only)
- Purple-nerve cymopterus (CRPR 2B.2) (not expected / high in suitable habitat only)
- Mojave monkeyflower (CRPR 1B.2) (moderate)
- Parish's popcornflower (CRPR 1B.1) (not expected / high in suitable habitat only)
- Beaver Indian breadroot (*Pediomelum castoreum*, CRPR 1B.2) (present)

Wildlife

One federally and State listed species, desert tortoise, is present and suitable habitat is present throughout the proposed SCE Calcite Facilities area (Special-status Wildlife,

Figures 4.3-4a, 4.3-4b, 4.3-4c, 4.3-4d, and 4.3-4e). The following special-status wildlife species have at least a moderate potential to occur and are described in detail in Appendix F (BRTR).

- Desert tortoise (FT, CT) (present)
- Golden eagle (BGEPA, FP) (high, foraging)
- Burrowing owl (CCSC) (present)
- Prairie falcon (CCSC) (high) (high, foraging)
- Loggerhead shrike (CCSC) (high)
- Bendire's thrasher (CCSC) (moderate)
- Le Conte's thrasher (CCSC) (high)

Critical Habitat

There is no USFWS designated critical habitat within the SCE Calcite Facilities area. The nearest critical habitat is for desert tortoise, located within 5 miles east of the substation Proposed Project area in the Ord-Rodman Unit, east of SR-247 (Figure 4.3-5, Desert Tortoise Critical Habitat and Predicted Density).

Wildlife Movement

As discussed for the solar generation plant, the CEHC Project identified areas in the vicinity of the SCE Calcite Facilities, north in Stoddard Valley, east in the Ord Mountains, and south in the San Bernardino Mountains, as Essential Connectivity Areas. These areas, as well as a portion of the Granite Mountains to the west, were identified as Natural Landscape Blocks (Spencer et al. 2010). Two BLM ACECs are located around the SCE Calcite Facilities area: the Ord-Rodman ACEC to the north and Granite Mountain Wildlife Linkage ACEC to the west. The western border of the substation project area abuts the Granite Mountain Wildlife Linkage ACEC (Figure 4.3-6, Wildlife Movement).

4.3.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Appendix A. Local policies are summarized in the following paragraphs.

San Bernardino Countywide Plan: 2020 County Policy Plan

The San Bernardino Countywide Plan and the Lucerne Valley Community Action Guide are described in Section 4.11, *Land Use and Planning* of this EIR. The 2020 County Policy Plan serves as the County's General Plan. Its Natural Resources Element establishes policies that preserve and enhance natural resources and provide guidance on the location of new development to protect them, summarized below:

- ***Policy NR-5.1 Coordinated habitat planning.*** *Participate in landscape-scale habitat conservation planning and coordinate with existing or proposed habitat*

conservation and natural resource management plans for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting.

- ***Policy NR-5.2 Capacity for resource protection and management.*** *Coordinate with public and nongovernmental agencies to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species.*
- ***Policy NR-5.3 Multiple-resource benefits.*** *Prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character.*
- ***Policy NR-5.4 Off-base recovery efforts.*** *Coordinate with military installations to facilitate off-base recovery of threatened and endangered species and landscape-scale conservation.*
- ***Policy NR-5.5 Mitigation and future responsibilities.*** *Require that new development satisfy habitat conservation responsibilities without shifting conservation responsibilities onto military property.*
- ***Policy NR-5.6 Mitigation banking.*** *Support the proactive assemblage of lands to protect biological resources and facilitate development through private or public mitigation banking. Require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.*
- ***Policy NR-5.7 Development, review, entitlement, and mitigation.*** *Comply with state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.*
- ***Policy NR-5.8 Invasive species.*** *Require the use of non-invasive plant species with new development and encourage the management of existing invasive plant species that degrade ecological function.*

These policies support the overall goal of an interconnected landscape of open spaces and habitat areas that promote biodiversity and healthy ecosystems.

San Bernardino County 2007 Development Code (Amended 2019)

- ***Development Code section 88.01.060*** *focuses on the conservation of specified desert plant species, including Joshua trees, but is not applicable on public lands. Land use projects subject to County approval must obtain a permit prior to the removal of these regulated plants*
- ***Development Code section 82.11*** *requires assessment and mitigation for certain special-status species for proposed projects within areas identified in the County's Biotic Resources Overlay areas*

Apple Valley Multi-Species Habitat Conservation Plan (MSHCP) / Natural Community Conservation Plan (NCCP)

The Town of Apple Valley is developing a MSHCP/NCCP in coordination with CDFW and USFWS. The draft MSHCP/NCCP is expected to be published in summer 2021. If adopted, it would (1) provide take authorization for certain state or federal threatened and endangered species and other special-status species (i.e., covered species) for entities identified as "permittees" and (2) specify habitat acquisition, protection, and management for lands where authorized take would be offset through habitat conservation. The proposed MSHCP/NCCP would cover approximately 169,000 acres. The proposed solar generation plant and the northernmost portion of the proposed gen-tie route are within the proposed boundaries for the Apple Valley MSHCP/NCCP. The proposed SCE Calcite Substation site and the southern portion of the Stagecoach Gen-tie Line are outside of its boundaries.

The State Lands Commission is not a participant in the planned MSHCP/HCCP. As a result, the proposed solar generation plant and gen-tie segments on State lands would not obtain CESA or ESA take authorization through the Plan, nor would they be subject to its terms or conditions when it becomes final.

Private lands in the northern segment of the gen-tie route are within the MSHCP/NCCP boundary and may be subject to the MSHCP/NCCP if the plan is finalized and adopted prior to final approval of the Proposed Project, and if gen-tie construction would require a discretionary permit from a MSHCP/NCCP permittee.

4.3.3 Significance Criteria

A significant impact is defined under California Environmental Quality Act (CEQA) as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (State CEQA Guidelines,[13] § 15382). The State CEQA Guidelines define direct impacts as those impacts that result from the Proposed Project and occur at the same time and place. Indirect impacts are caused by the Proposed Project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the Proposed Project.

The following impact analysis evaluates the potential direct and indirect effects to biological resources due to implementation of the Proposed Project. It further describes mitigation measures as feasible to reduce these impacts to less than significant levels. In addition to mitigation measures identified in the EIR, the Proposed Project would be subject to regulatory permitting through the California Department of Fish and Wildlife, Colorado River Regional Water Quality Control Board, and U.S. Fish and Wildlife Service for potential impacts to waters of the State, listed species, and their habitats. These required

[13] The "State CEQA Guidelines" refers to California Code of Regulations, Title 14, Chapter 3.

permits may impose conditions that would further mitigate potential impacts to biological resources. Refer to Appendix A for applicable regulations, policies, and standards.

Significance criteria for biological resources were derived from the Environmental Checklist form in Appendix G of the State CEQA Guidelines and section 15065 of the Guidelines (Mandatory Findings of Significance), which are used to determine whether a project or alternatives would result in significant impacts to biological resources as defined by CEQA. For purposes of this EIR, the following impact definitions were developed to determine if the Proposed Project would result in a significant biological impact(s).

Impacts to biological resources are considered significant if the Proposed Project would:

- Substantially reduce habitat for a fish or wildlife species (Impact BIO-1)
- Substantially affect state or federally listed threatened or endangered plants, California Rare Plant Rank (CRPR) 1 or 2 plants, or locally significant populations of other non-listed special-status plants by causing take of a listed species or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species (Impact BIO-2)
- Substantially affect state fully protected wildlife species, state or federally listed threatened or endangered wildlife, California Species of Special Concern, or state ranked S1, S2, or S3 special-status wildlife by causing take or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species or cause the local population to drop below self-sustaining levels (Impact BIO-3)
- Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance, which could cause nest abandonment (Impact BIO-4)
- Create a substantial risk of collision or electrocution for birds or bats (Impact BIO-5)
- Remove or degrade substantial acreage of riparian vegetation or sensitive vegetation communities identified as S1, S2, or S3, such that the community could be eliminated or its structure or function would be substantially affected (Impact BIO-6)
- Have a substantial adverse effect on jurisdictional wetlands or waters of the U.S. or waters of the State such that ecological structure or function of jurisdictional features through direct removal, filling, hydrological interruption, or other means (Impact BIO-7)
- 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 (Impact BIO-8)
- Conflict with local policies or ordinances protecting biological resources (Impact BIO-9)

- Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan (Impact BIO-10)

4.3.4 Environmental Impact Analysis and Mitigation

This analysis addresses 10 impacts for each of the Proposed Project components: the Stagecoach Solar Generation Plant, the Stagecoach Gen-tie Line, and the SCE Calcite Facilities. The analysis of the impacts to the solar generation plant (Section 4.3.4.1) is the most detailed and is cross-referenced in the subsequent discussions of the other two Proposed Project components.

Impacts to Joshua tree are evaluated in Impact BIO-1 as they pertain to vegetation and habitat, Impact BIO-2 as they pertain to special-status plants (candidate for State listing as threatened), and Impact BIO-6 as they pertain to sensitive vegetation communities (Joshua tree woodland).

Impacts to desert tortoise are evaluated in Impact BIO-3 as they pertain to special-status wildlife, and Impact BIO-8 as they pertain to wildlife movement.

Summary of Direct Impacts. Table 4.3-1 (Direct Permanent Impacts to Vegetation, Cover Types, and Jurisdictional Waters) presents the acreage of effect for each Proposed Project component to each habitat or resource type. The Proposed Project would have permanent and temporary impacts to natural communities and habitat. Permanent impacts would occur in areas that are graded, modified, and permanently dedicated to Proposed Project use including tower sites, facility sites, and access roads. Temporary impacts would occur in areas that are disturbed and subsequently revegetated such as work areas and staging yards.

Due to the slow recovery of impacted ecosystems from disturbance, even with restoration of impacted habitats, temporary impacts could lead to long-term or permanent loss or degradation of habitat or other biological resources. All impacts are therefore conservatively considered permanent. The data presented in this table is used to support the impact analysis for several of the impacts discussed in the following sections.

Table 4.3-1. Direct Permanent Impacts to Vegetation, Cover Types, and Jurisdictional Waters

	Stagecoach Solar Generation Plant (acres)	Stagecoach Gen-tie Line (acres)	SCE Calcite Substation Facilities (acres)	Total Acres
Vegetation and Cover Types				
Creosote bush–white bursage scrub	1,023	148	27	**1,198**
Creosote bush scrub	69	11	—	**80**

Table 4.3-1. Direct Permanent Impacts to Vegetation, Cover Types, and Jurisdictional Waters

	Stagecoach Solar Generation Plant (acres)	Stagecoach Gen-tie Line (acres)	SCE Calcite Substation Facilities (acres)	Total Acres
Nevada joint fir scrub (ephedra)	4	—	—	**4**
Mojave yucca scrub	650	2	—	**652**
White bursage scrub	—	—	1	**1**
Shadescale scrub	—	—	15	**15**
Allscale scrub	—	—	68	**68**
Joshua tree woodland[1]	101	—	—	**101**
Sparsely vegetated wash	7	—	—	**7**
Disturbed	4	5	—	**9**
Total Acres of Vegetation Affected	**1,858**	**166**	**111**	**2,135**
Impacts to Jurisdictional Waters				
CDFW/RWQCB Jurisdiction (acres)	1.3	0.2	0.7	2.2

[1] Sensitive Natural Community (CDFW 2019a). See also discussion of impacts to Joshua trees under Impact 2.

4.3.4.1 Impacts of the Stagecoach Solar Generation Plant

Impact BIO-1: Substantially reduce habitat for a fish or wildlife species.

The solar generation plant's impacts to wildlife habitat would be minimized through multiple mitigation measures and offset through permanent set-aside and management of compensation lands. **(Less than Significant with Mitigation).**

Impact Discussion

Construction. The proposed solar generation plant would result in permanent and temporary ground disturbance (see Table 4.3-1, Direct Permanent Impacts to Vegetation, Cover Types, and Jurisdictional Waters). Permanent impacts would occur in areas that are graded, modified, and permanently dedicated to Proposed Project use including tower sites, solar generation plant sites, and access roads. Temporary impacts would occur in areas that are disturbed and subsequently revegetated such as work areas and staging yards.

Construction impacts to habitat for common and special-status wildlife would result from site preparation and ongoing use of work and staging areas, installation of solar structures and the gen-tie line, creation and improvement of access roads, and construction of solar and operation and maintenance (O&M) facilities. Ground disturbing activities such as

clearing and grubbing, grading, trenching, earth-moving and excavation, pile driving, and vehicle traffic, would directly impact vegetation, topsoil, and subterranean wildlife burrow habitat. Such activities would crush, bury or uproot vegetation, damage roots, or disturb the existing seed bank and soil structure of native habitats. Removing or damaging seeds or dormant bulbs, corms, and rhizomes would impact plant reproduction and survival of sustainable vegetation communities that support wildlife. Compacting, grading, or removing topsoil would affect nutrients or mycorrhizae necessary for the health, growth, and reproduction of plants. Impacts to soils and vegetation would, in turn, affect wildlife that may be present, by removing nesting and foraging habitat, compacting soils, and collapsing burrows.

Due to the slow recovery of impacted habitat, even with restoration or revegetation, temporary impacts are expected to cause long-term or permanent loss or degradation of habitat or other biological resources. All direct impacts to habitat are therefore conservatively considered permanent.

Construction activities may cause indirect habitat effects such as altered hydrology, affecting runoff, erosion, or sedimentation, which may subsequently bury or scour habitat. Site grading would disrupt and damage plant roots, which would destabilize soils. Fugitive dust may adhere to plant leaves, interrupting photosynthesis and reducing the growth and vigor of vegetation, which in turn could affect food availability for birds and other wildlife due to reduced production of foliage and seeds. Disturbance of soils may indirectly impact habitat through the incidental introduction of non-native weeds, which may outcompete native species, reduce habitat quality, and increase fire risk.

These direct and indirect effects would reduce availability of natural habitats for local wildlife including special-status wildlife species identified in Section 4.3.1. For example, the site serves as foraging habitat during breeding season for golden eagles, migratory season for Swainson’s hawk, and winter or migratory season for several other special-status raptors. The habitat serves as year-round denning and foraging habitat for desert tortoises and kit foxes, and breeding season nesting and foraging habitat for burrowing owls.

The acreages of the proposed solar generation plant ground disturbance within each natural community, including sensitive communities, are provided in Table 4.3-1. Construction at the solar generation plant would directly affect all vegetation and habitat within the construction footprints.

Impacts to special-status plants including Joshua trees are addressed under Impact BIO-2. Impacts to riparian and sensitive communities are discussed under Impact BIO-6. Impacts to wetlands and jurisdictional waters of the State are discussed under Impact BIO-7.

Recommended Mitigation. Direct and indirect impacts to wildlife habitat from construction of the proposed solar generation plant would be minimized, avoided, or offset with recommended mitigation measures (MMs; full text follows the heading *Mitigation Measures*). The following paragraphs describe how each measure would protect the habitat for wildlife species:

- **MM BIO-1a: Implement Biological Monitoring.** Pre-construction clearance surveys would identify sensitive resources and limits of disturbance would be delineated to ensure impacts to habitat do not extend beyond work areas. Regular inspections would minimize impacts to habitat and wildlife by identifying failing fencing around work areas; avoiding wildlife entrapment in and around structures, work areas, and vehicles; and minimizing predation due to increased trash. Construction monitoring would ensure that the project would be in compliance with regulatory permits and that mitigation measures are being successfully implemented. In combination, these biological monitoring tasks would prevent accidental or unauthorized disturbance to wildlife and its habitat.
- **MM BIO-1b: Implement Worker Environmental Awareness Training.** A Worker's Environmental Awareness Training Program would ensure all on-site workers and contractors are familiar with sensitive resources, environmental laws and regulations, and mitigation measures for the project, so that disturbance of wildlife habitat would be minimized and limited to delineated work areas.
- **MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat.** Delineation of work areas would prevent incursion into unauthorized areas and minimized disturbance of soils, vegetation, and root systems would protect adjacent wildlife habitat. Construction materials, leaks, and spills would be cleaned up and vehicles would be maintained for leaks to prevent contamination of habitat. Low impact design would support limited natural post-construction revegetation in temporarily impacted areas, stabilize soils, and reduce dust and erosion.
- **MM BIO-1d: Weed Management.** An Integrated Weed Management Plan (IWMP) would minimize non-native infestations in wildlife habitat by specifying methods to prevent introduction or spread, monitoring to identify infestations, and timely implementation of manual or chemical control.
- **MM BIO-1e: Revegetation.** Impacts to habitats that are temporarily impacted by construction would be rectified through revegetation per a Revegetation Plan, in coordination with appropriate resource agencies. The Plan would detail revegetation methods, restoration strategies to minimize soil erosion, dust generation, and weed invasions, revegetation success standards, adaptive management strategies, reporting requirements, and long-term vegetation management, which would ensure successful revegetation of wildlife habitat areas.
- **MM BIO-1f: Protect Important Plants.** Impacts to special-status plants including Joshua tree and Beaver Indian breadroot would be minimized with protective measures including salvage, compensation, and propagation, which would preserve plants currently existing on the site and conserve individuals off-site. Project design would avoid a percentage of plants within the project boundaries.
- **MM BIO-1g: Compensate for Loss of Natural Habitat.** All permanent and long-term impacts to desert tortoise and Joshua tree habitat would be offset through

protection and management of off-site compensation lands of comparable habitat value, in perpetuity. Impacts to individual Joshua trees would be compensated with MM BIO-2a (Joshua Tree Protection and Salvage), as discussed in Impact BIO-2.

The Applicant would also be required to obtain all necessary permits, to maintain air and water quality Best Management Practices (BMPs), which would minimize impacts to habitat from fugitive dust, runoff, erosion, and sedimentation in and around work areas.

Additional relevant mitigation is presented in Section 4.2, *Air Quality*, for dust reduction, Section 4.7, *Geology and Soils*, for erosion control, and Section 4.10, *Hydrology and Water Quality*, for protection of water quality.

O&M and Decommissioning. Proposed O&M and decommissioning activities would have direct and indirect impacts to habitat, as described above. However, the scale of O&M impacts to habitat would be less than construction impacts because O&M and decommissioning activities would mostly occur in areas previously disturbed by construction. Examples of O&M impacts to habitat include access road maintenance (brush trimming, culverts; weed control), gen-tie tower repairs or replacements, and repairs of underground cables. Potential indirect impacts to habitat from O&M could include dust, erosion, or invasive weeds that may impact habitat quality, as described for construction. If the Proposed Project facility elevates ambient temperature within the site, surrounding vegetation and habitat may be indirectly impacted. The battery storage facility has a potential to start a wildfire, which would also impact vegetation in the Proposed Project vicinity. Section 4.18, *Wildfire* addresses this impact.

The Applicant has proposed decommissioning activities as described in Section 2.5. During decommissioning, some minor habitat disturbance may result from disassembling and transporting facilities, or from site remediation. Following decommissioning, the Proposed Project site would be revegetated with native plants and re-seeded as required.

Direct and indirect impacts to habitat from O&M and decommissioning would be minimized, avoided, rectified, or offset as described for MMs BIO-1a through BIO-1g. Implementation of MMs BIO-1d (Weed Management) and BIO-1e (Revegetation) would reduce wildfire fuel load on-site, and MM WIL-1 (Expand Fire Management and Prevention Plan) would update fire management activities related to solar power facilities to minimize the potential for wildfire.

Impact Conclusion. While construction of the proposed solar generation plant would result in a permanent net loss of desert shrubland habitat on the Proposed Project site, natural open space surrounds the Proposed Project site in the DRECP Plan Area and in BLM's ACECs. Desert scrub communities comprise approximately 70.5 percent of the DRECP Plan Area. More specifically, Mojavean-Sonoran desert scrub is the most common natural community in the Plan Area, comprising 59 percent of the total area (BLM and CDFW 2014). The four surrounding BLM ACECs encompass over 300,000 acres and are

managed for wildlife values and habitat. In addition, the site is also surrounded by thousands of acres of undeveloped state and private land that would continue to support habitat. Critical habitat would not be affected by the Proposed Project.

Impacts would be minimized with MMs BIO-1a through BIO-1f and offset with the mitigation requirement for acquisition of compensatory mitigation lands (MM BIO-1g). The habitat loss of 1,858 acres (see Table 4.3-1) would be offset by the permanent preservation and management of comparable habitat at a ratio of 1:1. Given the extensive natural lands in public open space managed for their wildlife habitat values throughout the region and the implementation of the recommended mitigation measures, Impact BIO-1 would be less than significant. Habitat for fish and wildlife species would not be substantially reduced during construction, O&M, and decommissioning of the proposed solar generation plant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring. Monitoring to ensure conformance with conditions of approval, including effective protection and avoidance of biological resources, shall be implemented by the Applicant (Aurora Solar LLC for the Stagecoach Solar Generation Plant and Stagecoach Gen-tie Line and SCE for the Calcite Facilities) as follows:

Biological Monitoring Team. During construction and decommissioning the Applicant shall employ or contract with a biological monitoring team to oversee project activities. Any activity that may impact vegetation, wildlife, and sensitive resources will be monitored to ensure compliance with all mitigation measures for biological resources. The biological monitoring team will consist of:

- **Lead Biologist:** The Applicant shall assign a Lead Biologist, approved by the California State Lands Commission (CSLC), as the primary point of contact for the CSLC and resource agencies regarding biological resources mitigation and compliance. The Lead Biologist will be under contract to the Applicant and will serve as principal point of contact to the CSLC regarding implementation and compliance with biological resources measures throughout construction, operation and maintenance (O&M), and decommissioning.
- **Biological Monitor:** Biological monitors will be overseen by the Lead Biologist and will perform any required surveys, ground disturbance and construction monitoring, wildlife monitoring, inspections, marking sensitive resource buffers, and revegetation monitoring during project activities. Biological monitors will include trained desert tortoise monitors (MM BIO-3c), nest monitors (MM BIO-3f) and other specialists as appropriate to any given measure.
- **Authorized Desert Tortoise Biologist:** For desert tortoise protection measures (MM BIO-3c), Avangrid will nominate one or more qualified individuals to serve as

Authorized Desert Tortoise Biologist for the solar generation plant and gen-tie line, for approval by the USFWS

The Applicant shall provide the resumes of each member of the proposed Biological Monitoring Team to the CSLC for approval prior to onset of ground-disturbing activities. Each member of The Biological Monitoring Team will have demonstrated expertise with the biological resources within the project region. Each member of the Biological Monitoring Team will have authority to halt any activities in any area if it is determined that the activity, if continued, would cause an unauthorized adverse impact to biological resources.

The duties of the Biological Monitoring Team will vary during the construction, O&M, and decommissioning phases, based on the biological monitoring tasks needed for compliance during each phase. The Biological Monitoring Team will be used mostly during construction; however, some intermittent inspections or monitoring may be needed during O&M and decommissioning. Biological monitoring during O&M will not necessitate a full team, but the Applicant will ensure all required biological monitoring and reporting (e.g., revegetation and avian mortality monitoring) are completed as specified in MMs below. During O&M, an Applicant staff member serving as compliance manager may perform the administrative duties of the Lead Biologist, by overseeing qualified Biological Monitors, to ensure compliance with biological mitigation measures, such as overseeing inspections for entrapped wildlife and fence condition, reporting dead or injured wildlife, and avoiding nesting birds. Qualifications for monitors during O&M and lead agency review of resumes will be as described above.

In general, the duties of the Lead Biologist will include, but will not be limited to:

- Regular, direct communication with representatives of the CSLC, and other agencies, as appropriate. The Lead Biologist (or the Applicant's compliance manager during O&M) shall immediately notify the CSLC and applicable resource agencies in writing of dead or injured special-status species, or of any non-compliance with biological mitigation measures or permit conditions.
- Train and supervise Biological Monitors, including desert tortoise monitors, nest monitors, and construction monitors
- Conduct or oversee Worker Environmental Awareness Program (WEAP) training (MM BIO-1b)
- During construction and decommissioning, clearly mark and inspect sensitive biological resource areas in compliance with regulatory terms and conditions
- Oversee wildlife clearance surveys, monitoring of ground disturbance and grading, and other biological monitoring requirements. Ensure that all biological monitoring is completed properly and on schedule.

- Conduct or oversee bi-weekly compliance inspections during ground disturbing activities and communicate any remedial actions needed (i.e., trash, fence, weed maintenance; wildlife mortality) to maintain compliance with mitigation measures

Reporting. The Lead Biologist (or the Applicant's compliance manager during O&M) shall report regularly to the CSLC to document the status of compliance with biological mitigation measures.

During construction and decommissioning:

- Provide weekly verbal or written updates to the CSLC with any information pertinent to the CSLC, to resource agencies, or to state or federal permits for biological resources
- Prepare and submit monthly and annual compliance reports to include a summary of project activities that occurred, biological resources surveys and monitoring that were performed, any sensitive or noteworthy species observed, weed infestations removed, and non-compliance issues and remedial actions that were implemented

During O&M:

- Conduct quarterly compliance inspections and reporting, to be submitted to the CSLC, to document the condition of exclusion fencing, wildlife mortality, and any biological resource issues of note

MM BIO-1b: Implement Worker Environmental Awareness Training. To ensure worker understanding and conformance with conditions of approval, including effective protection and avoidance of biological resources, the Lead Biologist shall prepare and implement a Worker Environmental Awareness Program (WEAP) during construction, O&M, and decommissioning. The Applicant shall be responsible for ensuring that all workers at the site receive WEAP training prior to beginning work on the project and throughout construction and operations. The WEAP shall be available in English and Spanish. The Applicant shall submit the WEAP to the CSLC for approval prior to implementation. The WEAP shall:

- Be developed by or in consultation with the Lead Biologist and consist of an on-site or training center presentation with supporting written material and electronic media, including photographs of protected species, available to all participants
- Provide an explanation of the function of flagging that designates authorized work areas; specify the prohibition of soil disturbance or vehicle travel outside designated areas
- Discuss general safety protocols such as vehicle speed limits, hazardous substance spill prevention and containment measures, and fire prevention and protection measures

- Review mitigation and biological permit requirements
- Explain the sensitivity of the vegetation and habitat within and adjacent to work areas, and proper identification of these resources
- Discuss the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act and the consequences of non-compliance with these acts
- Discuss the locations and types of sensitive biological resources on the project site and adjacent areas and explain the reasons for protecting these resources
- Inform participants that no snakes, other reptiles, birds, bats, or any other wildlife will be harmed or harassed
- Place special emphasis on species that may occur on the project site and/or gen-tie lines, including special-status plants, desert tortoise, burrowing owl, golden eagle, nesting birds, desert kit fox, American badger, and burro deer
- Specify guidelines for avoiding rattlesnakes and reporting rattlesnake observations to ensure worker safety and avoid killing or injuring rattlesnakes. Wherever feasible, rattlesnakes must be safely removed from the work area using appropriate snake handling equipment, including a secure storage container for transport.
- Describe workers' responsibilities for avoiding the introduction of invasive weeds onto the project site and surrounding areas, describe the Integrated Weed Management Plan
- Provide contact information for the Lead Biologist and instructions for notification of any vehicle-wildlife collisions or dead or injured wildlife species encountered during project-related activities
- Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines
- *Desert Tortoise Education Requirements*: Prior to the start of construction activities, a desert tortoise education program shall be presented by the Lead Biologist to all personnel who will be present on Project work areas. Following the start of construction, any new employee shall be required to complete the tortoise education program prior to working on-site. At a minimum, the tortoise education program shall cover the following topics:
  - A detailed description of the desert tortoise, including color photographs
  - The distribution and general behavior of the desert tortoise
  - Sensitivity of the species to human activities
  - The protection the desert tortoise receives under the state and federal Endangered Species Acts, including prohibitions and penalties incurred for violation

- The protective measures being implemented to conserve the desert tortoise during construction activities
- Procedures and a point of contact if a desert tortoise is observed on-site

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat. Prior to ground-disturbing activities during construction, O&M, or decommissioning, authorized work areas shall be clearly delineated. These areas shall include, but are not limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils. Delineation may be implemented with common orange vinyl "fencing" or staking to clearly identify the limits of work and shall be verified by the Lead Biologist. No paint or permanent discoloring agents shall be applied to rocks or vegetation (to indicate surveyor construction activity limits or for any other purpose). Fencing/staking shall remain in place for the duration of the ground-disturbing activity and while construction vehicles are driving on-site. Spoils shall be stockpiled in disturbed areas. All disturbances, vehicles, and equipment shall be confined to the fenced/flagged areas.

Low-Impact Site Preparation. Native vegetation will be allowed to recover from rootstocks and seed bank wherever facilities do not require permanent vegetation removal (e.g., access roads, foundations, paved areas, or fire clearance requirements) within the perimeter fenceline of the solar generation plant[14] and under solar arrays. Vegetation height and density will be managed as needed for O&M and fire safety, but vegetation management will otherwise focus on maintaining habitat and soil conditions.

Upon completion of construction, O&M, or decommissioning activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of, including wrapping material, cables, cords, wire, boxes, rope, broken equipment parts, twine, strapping, buckets, and metal or plastic containers. Any unused or leftover hazardous products shall be properly disposed of off-site.

MM BIO-1d: Weed Management. The Applicant shall prepare and implement an Integrated Weed Management Plan (IWMP) to minimize or prevent invasive weeds from infesting the site or spreading into surrounding habitat during construction, O&M, and decommissioning. The plan must be submitted to the CSLC staff for review and approval a minimum of 60 days prior to the start of construction activities. The IWMP shall identify weed species occurring or potentially occurring in the project area, means to prevent their introduction or spread (e.g., vehicle cleaning and inspections), monitoring methods to identify infestations, and herbicides or manual methods that may be used for control or eradication. Herbicide use shall be avoided in environmentally sensitive areas. The IWMP shall also require monthly and annual reporting during construction and decommissioning, which shall identify weeds found, the control mechanisms used, and the success of the effort. For additional details on reporting, see MM BIO-1a. The Lead

[14] The "perimeter fenceline of the solar generation plant" here and throughout refers to the entire facility, including battery storage, electrical components, and administrative sites or structures

Biologist shall oversee timely implementation of the IWMP and manual or chemical removal measures to control or eradicate invasive weeds.

MM BIO-1e: Revegetation. The Applicant shall prepare and implement a Revegetation Plan, to be submitted to the CSLC staff for review and approval a minimum of 60 days prior to the start of construction activities. The Plan shall be implemented in areas temporarily impacted during construction and operation. Any additional acreage disturbed during O&M or decommissioning will also be subject to revegetation according to the terms of the Revegetation Plan. The Lead Biologist shall oversee implementation of the Revegetation Plan to meet success criteria and prevent further degradation of areas temporarily disturbed by project activities. Pre-disturbance habitat values would not be restored, but off-site compensation would offset the loss in habitat value.

The Revegetation Plan shall detail the methods to implement the following restoration/ revegetation requirements.

- **Revegetation of temporarily impacted sites.** Upon completion of construction, areas that are temporarily impacted during construction will be revegetated with native desert species. The Revegetation Plan shall specify methods to prevent or minimize further site degradation; stabilize soils; maximize the likelihood of vegetation recovery over time (for areas supporting native vegetation); and minimize soil erosion, dust generation, and weed invasions. The nature of revegetation shall differ according to each disturbed area, its pre-disturbance condition, and the nature of the construction disturbance. The Revegetation Plan shall include: (a) soil preparation measures, including locations and methods of recontouring, decompacting, imprinting, or other treatments; (b) details for topsoil storage, as applicable; (c) plant material collection and acquisition guidelines, including guidelines for salvaging, storing, and handling plants from the project site, as well as obtaining replacement plants from outside the project area (plant materials shall be limited to locally occurring native species from local sources); (d) a plan drawing or schematic depicting the temporary disturbance areas (drawing of “typical” gen-tie structure sites will be appropriate); (e) time of year that the planting or seeding will occur and the methodology of the planting; (f) a description of the irrigation, if used; (g) success criteria; and (h) a monitoring program to measure the success criteria, commensurate with the Plan’s goals, (i) contingency measures for failed revegetation efforts not meeting success criteria.

MM BIO-1f: Protect Important Plants. Due to the Joshua tree’s CESA status as a candidate for listing, and the Beaver Indian breadroot (CRPR 1B) occurrence within the proposed SCE Calcite Facilities area, the Applicant will reduce Project effects on Joshua tree and Beaver Indian breadroot impacts through one or a combination of the following strategies. If the California Fish and Game Commission determines that Joshua tree listing is not warranted and the western Joshua tree is neither a candidate for listing nor elevated to CRPR 1B status prior to the start of solar field construction, then Joshua tree

impacts would be mitigated through habitat compensation (MM BIO-1g: Compensate for Loss of Natural Habitat) and the following measures would not be required.

- **Avoidance.** Where Joshua trees or Beaver Indian breadroot exist within the project fenceline but are not within the disturbance footprint of the solar arrays or support facilities, project site preparation and construction shall minimize impacts by minimizing or avoiding soil compaction within a radius of 10 feet (3 meters) surrounding each plant.
- **Salvage of Joshua Tree and Beaver Indian breadroot.** The Applicant shall consult with a qualified horticulture specialist regarding the success of salvage efforts for these species. If the strategy has been shown to be feasible and certain Joshua trees and/or breadroot have been judged suitable for relocation, the Applicant shall prepare and implement a Salvage and Relocation Plan (SRP) for Joshua Tree or Beaver Indian breadroot (as applicable based on presence of these plants), to be submitted to CSLC staff for review and approval at least 60 days prior to disturbance of any occupied habitat. The Applicant shall contract with a qualified entity with experience and qualifications, to salvage the Joshua trees or Beaver Indian breadroot judged suitable for relocation, and transfer them to a suitable location outside the project footprint. The Lead Biologist shall oversee implementation of the SRP. The SRP shall include methods to salvage and replant Joshua tree and breadroot specimens found on the site; define the season for salvaging the plants; specify methods for salvage, storage, and re-planting them; define locations for re-planting; and state appropriate monitoring and success criteria for the salvage work. Planting sites shall be selected in coordination with the CSLC and CDFW to ensure avoidance of excessive disturbance to existing habitat. For Joshua trees, planting sites will be prioritized as follows:
    1. Temporary disturbance areas within the project site scheduled for revegetation or restoration.
    2. Previously disturbed areas within suitable habitat on off-site public lands.
    3. Previously disturbed areas within suitable habitat on off-site private lands.
    4. Landscaping sites on public lands (e.g., public parks).
    5. Landscaping areas on private lands.
- **Horticultural Propagation and Off-site Introduction.** If the CSLC, in coordination with CDFW and the Applicant, agree that salvage and relocation is not feasible for Joshua trees or Beaver Indian breadroot, then the Applicant shall consult with a qualified entity, to develop and implement an appropriate experimental propagation and relocation strategy.

MM BIO-1g: Compensate for Loss of Natural Habitat. The Applicant shall acquire and protect, in perpetuity, compensation habitat to offset loss of natural habitat. Habitat acquisition and protection may be conducted through a CDFW approved mitigation bank

or another approved third party, or may be carried out by the Applicant itself (with CDFW approval). The preliminary acreages are presented in Table 4.3-1, but final acreages shall be based upon final calculation of impacted acreage for the approved project design. Acreages will be adjusted as appropriate for the approved alternative and for design modifications made after approval.

Compensation shall be provided for impacts to the following resources, at the specified ratios (acres acquired and preserved to acres impacted):

- **Desert tortoise habitat.** Suitable desert tortoise habitat is found throughout the proposed solar generation plant site, gen-tie route, and SCE Calcite Facilities area. Compensation for loss of this habitat shall be at a 1:1 ratio (i.e., one acre of compensation habitat of comparable quality for each acre of permanent or temporary disturbance).
- **Joshua tree woodland and Indian breadroot habitat.** Compensation shall be at a 1.5:1 ratio (i.e., 1.5 acres of occupied compensation habitat for each acre of impacted occupied habitat), and based on the acreage of occupied Joshua trees or Indian breadroot habitat lost in Project construction. Occupied habitat will be defined either according to the definition used by the CDFW Incidental Take Permit (ITP) or, if there is no ITP, as a 200-foot radius surrounding all Joshua trees or Indian breadroot plants. Compensation habitat must support the target species in densities comparable to the habitat lost during construction. If compensation habitat with comparable densities of the target plants is not available, greater acreage will be required so that sufficient habitat shall be acquired to protect 1.5 Joshua trees or Indian breadroots for each individual removed for construction. Any compensation habitat for these plants that is also suitable habitat for desert tortoise will be credited toward the overall desert tortoise habitat compensation requirement.

If any additional acreage of desert tortoise habitat or Joshua tree woodland is disturbed during O&M or decommissioning, that disturbance will also be compensated at the same ratios unless those resources are no longer considered sensitive at that time.

Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands shall include all the following: Provide habitat value that is comparable to the habitat impacted, taking into consideration soils, vegetation, topography, human-related disturbance, invasive species, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values. Mitigation may be “nested” or “layered,” to the extent that it meets habitat requirements for multiple species that will or may be impacted by the Project.

The Applicant shall provide funding or bonding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands prior to construction activities on native habitat. Within 18

months of completing construction, the Applicant or an approved third party shall prepare a compensation plan, identifying the proposed mitigation bank or compensation lands, and specifying the land ownership, conservation easement terms, long-term management, and responsibility for funding or endowment. The compensation plan shall be submitted for review and approval to the CSLC. The CSLC shall consult with CDFW and USFWS to ensure that the mitigation will support any permits and authorizations to be issued by either agency.

MM HAZ-1: Hazardous Materials Training and Management Plan(Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-2:	**Substantially affect state or federally listed threatened or endangered plants, California Rare Plant Rank 1 or 2 plants, or locally significant populations of other non-listed special-status plants by causing take of a listed species or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species.**
The proposed solar generation plant's impacts to Joshua trees (candidate for State listing as threatened or endangered) would be reduced through salvage and offset through habitat compensation. **(Less than Significant with Mitigation)**	

Impact Discussion

Construction. Impacts to special-status plants could occur during site preparation at any work site. Impacts at temporary disturbance areas would most likely be permanent as plants would be removed during site preparation and would be unlikely to recolonize due to heavily altered soil and seed bank conditions. Potential indirect impacts to special-status plants that may be found in undisturbed habitat adjacent to the proposed solar generation plant could include scour of plants from runoff, sedimentation, and erosion, and disruption of photosynthesis from fugitive dust, and incidental introductions of invasive weeds that reduce habitat quality and increase fire risk.

No federally listed plant species have potential to occur. One candidate for State listing, western Joshua tree, is present in the Proposed Project area. As a candidate for State listing, the Joshua tree is addressed here as a listed species, consistent with requirements of CESA. Site preparation for construction at the proposed solar site would remove 398 Joshua trees (Figure 4.3-3a, Special-status Plants). No other listed threatened or endangered plants, or CRPR 1 or 2 plants have been identified in the proposed solar generation plant area.

Although some impact areas may only be temporarily disturbed, the Joshua trees, if present, would be permanently removed from those areas during site preparation. Neither Joshua trees nor other special-status plants are expected to re-colonize temporarily

disturbed areas, except with active restoration efforts (e.g., salvage, as specified in MM BIO-1e), due to substantial alterations to soil conditions and seed banks.

No other potentially significant impacts to special-status plants are expected. Mojave monkeyflower (CRPR 1B.2) was not located during agency protocol field surveys. Although habitat appears suitable and there is a moderate probability it could be present in a season of different rainfall or temperature patterns (see Appendix F and Section 4.3.1), it is not expected to occur in large numbers. Therefore, adverse impacts of the Proposed Project construction, should they occur, would not be substantial and would be less than significant. Any impacts to CRPR 4 plants (Section 4.3.1) would be less than significant due to their low conservation priority. No other CRPR 1 or 2 species are expected to occur due to lack of suitable habitat.

Recommended Mitigation. Direct and indirect impacts to vegetation, including Joshua trees, from proposed solar generation plant construction would be minimized, avoided, or offset with implementation of MMs BIO-1a to BIO-1g, as described for Impact BIO-1. Mitigation measures would identify sensitive resources in the Proposed Project area and prevent disturbance of vegetation outside approved boundaries. Direct permanent and temporary impacts would be compensated for and offset with revegetation and acquisition of compensation lands. Indirect impacts to vegetation from weed infestation would be minimized with implementation of an IWMP, as required in MM BIO-1d.

Additionally, MM BIO-1e requires further mitigation of Joshua tree impacts through avoidance, compensation, salvage and relocation, or experimental salvage and propagation of individual trees. Applicability of these parts of MM BIO-1e would be dependent on the CESA listing status or other CDFW conservation status of the western Joshua tree at the beginning of Proposed Project construction.

O&M and Decommissioning. O&M activities would occur in previously disturbed areas where special-status plants are no longer present, and no direct impacts to special-status plants are anticipated. Potential indirect impacts to special-status plants from O&M and decommissioning could include dust, erosion, or invasive weeds, as described in Impact BIO-1.

Recommended Mitigation. Indirect impacts to special-status plants from invasive weeds would be minimized with implementation of MM BIO-1d (Weed Management). Indirect impacts from dust and erosion would be minimized with MM BIO-1e (Revegetation), as well as mitigation presented in analysis of air quality and soils, as described for Impact BIO-1. Direct permanent and temporary impacts would be compensated for and offset with revegetation (MM BIO-1e) and acquisition of compensation lands MM BIO-1g (Compensate for Loss of Natural Habitat).

Impact Conclusion. Approximately 190,000 acres of Joshua tree woodland are located within the BLM's California Desert Conservation Area (CDCA) and 76,000 acres are

located within the Pinto Lucerne Valley Subarea, which encompasses the vicinity of the Proposed Project site (BLM and CDFW 2014). Approximately 101 acres of Joshua tree woodland would be impacted on the Proposed Project site. To offset the loss of this woodland and 398 Joshua trees, MM BIO-1g (Compensate for Loss of Natural Habitat) requires that Joshua trees would be permanently protected on compensation lands at a ratio of 1.5:1. No critical habitat for special-status plants is located within the Proposed Project area.

Without mitigation, take of Joshua trees on the Proposed Project site would be a significant impact. However, the number of Joshua trees and acreage of Joshua Tree Woodland is relatively small in the larger context of the Mojave desert. With implementation of recommended mitigation measures, particularly off-site compensation, the net impact to Joshua trees would not be substantial and would be less than significant for construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

Impact BIO-3: Substantially affect state fully protected wildlife species, state or federally listed threatened or endangered wildlife, California Species of Special Concern, or state ranked S1, S2, or S3 special-status wildlife by causing take or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species or cause the local population to drop below self-sustaining levels.

The proposed solar generation plant impacts to special-status wildlife, including desert tortoise, would be mitigated through a series of avoidance and protection measures and offset by habitat compensation and preservation. **(Less than Significant with Mitigation)**

Impact Discussion

Construction. Impacts to special-status wildlife could occur during clearing and grubbing, grading, earth-moving and excavation, and vehicle traffic, which may result in the disturbance or removal of vegetation or burrows used as habitat (see Impact BIO-1), or the direct crushing or burial of ground-dwelling wildlife and their burrows. Ground disturbance and clearing would impact vegetation used by wildlife for shelter, foraging, nesting, and reproduction, as described in Impact BIO-1.

Construction activities would cause most mobile vertebrate wildlife to leave or attempt to leave the site. Animals dispersing from the site could be at increased risk of predation and possible vehicle collisions as they flush from cover during site clearing. Increased presence of equipment and vehicle traffic may also result in increased wildlife strikes. After leaving their home territories, displaced animals may be unable to find suitable food or cover in new, unfamiliar areas. Displacement effects would apply to common wildlife species and to special-status species.

Construction could cause mortality of small mammals and reptiles, including special-status species, which may be crushed by construction equipment. Increased vehicle and equipment activity could cause injury or mortality on roads and construction sites. Individuals may be crushed or buried or may fall or become trapped in excavation areas. Suitable habitat would be removed or degraded by ground disturbance during construction, or may be affected by spread of non-native weeds due to the Proposed Project's soil disturbance. Increased human presence attracts opportunistic predators and increased noise, vibration, dust, and artificial light may restrict individuals from accessing shelter or foraging areas. Soil disturbance and compaction may destroy burrows or may leave the area unsuitable for future burrowing.

In most cases, adult birds would fly away from the disturbance, but bird nests (including eggs or nestlings, if present) would be lost. Burrowing owls, if present during construction, could shelter inside burrows where they could be vulnerable to crushing. Land use conversion and fencing would exclude special-status reptiles, birds, and mammals from portions of their territories. Facilities could present hazards to wildlife, including special-status wildlife. For example, vertical structures can be collision hazards for birds or bats in flight; trenches can be pitfall hazards for terrestrial wildlife; and construction materials such as open pipes or tubing can attract birds or terrestrial species, which can become trapped inside.

Noise and lighting during construction could affect wildlife in adjacent habitats by disrupting foraging, breeding, sheltering, and other activities; or may cause animals to avoid otherwise suitable habitat surrounding the site. Lighting during construction may affect nocturnal wildlife species, by causing alterations to foraging or movement behavior, possibly attracting some species to the site (e.g., bats may be attracted to insects at light sources) or dissuading other species from approaching the site. Various other human activities (e.g.,

vehicle traffic, accumulated waste, or nuisance water sources) can be injurious to special-status wildlife, either as direct hazards (vehicle strikes) or as attractants such as food or water that may in turn put animals in harm's way or increase presence of opportunistic predators. Facilities and equipment may become nest or perch sites for common raven, which in turn may prey on special-status species (desert tortoise).

One federally and State listed threatened species, desert tortoise, is present (Section 4.3.1). Without avoidance or protection measures, Proposed Project impacts to desert tortoise would be similar to those described for reptiles and small mammals.

The State listed Swainson's hawk was observed flying over the Proposed Project area during migration. Site preparation would result in the loss of migratory season foraging habitat.

No other listed threatened or endangered wildlife have been identified in the Proposed Project area. Impacts to other special-status wildlife species are presented below by species group.

Invertebrates. Crotch bumblebee, if present, may be crushed or buried from site preparation. Invertebrate host plants may be cleared or damaged and topsoil would be disturbed, where eggs or larvae may be impacted.

Reptiles. Rosy boa was not observed, but suitable habitat is present, and it has been documented within 0.5 miles of the Proposed Project area. Without avoidance or protection measures, impacts to rosy boa would be similar to those described for reptiles and small mammals.

Birds. Active burrowing owl burrows were observed within the Proposed Project area. Loggerhead shrike and Le Conte's thrasher were observed and are expected to nest and forage in the Proposed Project area. Golden eagle is present, nesting in mountain cliffs surrounding the Proposed Project area within one mile and using the site for foraging. Peregrine falcon has been observed foraging over the site. Prairie falcon has a high potential to forage in the Proposed Project area. Suitable habitat for Bendire's thrasher is located in the Proposed Project area and there is a moderate potential to occur.

Direct impacts to special-status birds could include loss of active nests and loss of suitable shelter and foraging habitat (both addressed in Impact BIO-1) and food sources due to vegetation clearing and ground disturbance. Incidental spread of non-native weeds would decrease habitat quality. Construction activities could cause indirect disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic predators. Proposed Project activities are expected to occur during periods that overlap with the nesting season (February 1 [January 1 for raptors] through August 15) when birds may be vulnerable to nest disturbance.

Birds may also be impacted by glare, striking the solar generation plant or power lines during flight, or electrocution on power lines, as described in Impact BIO-5.

Mammals. American badger and desert kit fox are present in the Proposed Project area. Pallid San Diego pocket mouse has a moderate potential to occur with suitable vegetation and soils throughout the site. Townsend's big-eared bat and western mastiff bat have moderate potential to forage in the Proposed Project area. Potential impacts to terrestrial mammals would be similar to those described for small mammals and reptiles. Special-status bats may be at risk of striking the solar generation plant or power lines during flight, as described in Impact BIO-5.

A habitat assessment for Mohave ground squirrel (MGS)(ST) was performed for the Proposed Project site (BRTR, Appendix F). While suitable habitat is present, MGS are not expected to occur as known occurrences (from trapping) are at least 20 miles away, the Proposed Project area is over 8 miles from the MGS geographic range, and MGS occurrences are lacking in the vicinity since 1955. A protocol MGS survey was conducted in 2017 in the Proposed Project vicinity at the SCE Calcite Facilities and none were observed.

Direct and indirect impacts to wildlife shelter, foraging, and breeding habitat from proposed solar generation plant construction would be minimized, avoided, or offset with implementation of MMs BIO-1a to BIO-1g, as described for Impact BIO-1 and as listed below under mitigation measures. These mitigation measures would identify sensitive resources in the Proposed Project area and prevent disturbance of vegetation outside approved boundaries. Direct permanent and temporary impacts would be compensated for and offset with revegetation and acquisition of compensation lands. Indirect impacts to vegetation from weed infestation would be minimized with an IWMP.

Recommended Mitigation. In addition to mitigation measures identified for Impacts BIO-1 and BIO-2, MMs BIO-3a to BIO-3g would further reduce direct and indirect impacts to special-status wildlife in the Proposed Project area. Mitigation measures recommended for Impact BIO-3 are summarized below and the full text is presented under the *Mitigation Measures* heading.

- **MM BIO-3a: Protect Wildlife Resources.** Pre-construction surveys would identify sensitive wildlife to ensure they are avoided and allowed to escape work areas. Temporary or permanent exclusion fencing around equipment, work areas, and solar generation plant and avoidance buffers around sensitive resources would minimize wildlife exposure to hazards and avoid direct impacts such as crushing and burial. Direct mortality from vehicle strikes would be minimized with vehicle inspections and restrictions on speed limits. Indirect impacts would be minimized and avoided with restrictions on night lighting, toxic substances, and noise and vibration levels. Work area inspections would minimize mortality due to trapping in open pits, trenches, and excavation areas. Proper disposal of trash would minimize

impacts due to human presence and opportunistic predators. Securing trash, water sources, and construction equipment and materials would avoid attracting and entrapping wildlife.

- **MM BIO-3b: Relocate Special-status Wildlife Species.** A Wildlife Relocation Plan would guide relocation activities in accordance with USFWS and CDFW guidelines for special-status wildlife species including (but not limited to), desert tortoise, burrowing owl, desert kit fox, and American badger. Relocation of wildlife outside the disturbance areas would avoid direct mortality from crushing or burial of individuals or burrows and dens during construction.
- **MM BIO-3c: Protect Desert Tortoise.** Desert tortoise pre-construction clearance surveys, compliance monitoring, and inspections would avoid direct impacts to desert tortoise due to crushing, burial, vehicle strikes, and entrapment in pits or trenches. Temporary and permanent exclusion fencing will minimize desert tortoise entry into work areas and encounters with human activity, vehicles, and equipment. Approved relocation of desert tortoises from active burrows in work areas would avoid direct impacts during construction.
- **MM BIO-3d: Protect Desert Kit Fox and American Badger.** Pre-construction surveys for individuals and dens, pre-construction monitoring of potentially active dens, and buffers, avoidance, and relocation of individuals in work areas would avoid direct mortality of desert kit fox and American Badger during construction.
- **MM BIO-3e: Avoid Effects on Burrowing Owl.** Pre-construction surveys for individuals, sign, and active burrows; avoidance buffers around active burrows; and avoidance of nesting season (February 1 through August 31) would avoid direct mortality of burrowing owl during construction.
- **MM BIO-3f: Bird and Bat Protection.** The Applicant shall prepare and implement a Bird and Bat Conservation Strategy (BBCS), including pre-construction nesting surveys, avoidance buffers around nests, and avoidance of vegetation removal during nesting season (January 1 to August 15), to minimize direct loss of nests and young by avoiding and restricting activity around active nests. The BBCS will identify potential hazards to birds during construction, O&M, and decommissioning, and specify bird and bat mortality monitoring procedures to document the severity of potential hazards. The BBCS will specify bird and bat mortality thresholds and identify adaptive management measures to be implemented if the thresholds are exceeded.

  Additionally, MM BIO-3f requires the Applicant to prepare a Nesting Bird Management Plan (NBMP) to protect nesting birds, including golden eagles, by specifying performance standards such as avian biologist qualifications, pre-construction field survey scheduling, and assessment of potential impacts according to species and project activities. It also establishes a standard buffer distance with

specific measures for adjusting the distance according to circumstances, and a method to amend the Plan if needed.

- **MM BIO-3g: Implement Protective Designs for Collector Line and Gen-tie Lines.** Solar generation plant collector lines, gen-tie lines, or other energized electrical components shall be designed in compliance with current APLIC standards and practices (APLIC 2012; APLIC 2006) to minimize collision and electrocution hazard. Design requirements would include discouraging use by raptors for perching or nesting, mechanisms to visually warn birds (permanent markers or bird flight diverters) on power lines, and sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture).

O&M and Decommissioning. Proposed O&M and decommissioning would mostly occur in areas previously disturbed by construction, where vegetation is no longer present. Facilities would be permanently fenced, excluding larger wildlife. Small mammals and reptiles may pass through fencing to occupy O&M facilities, where they may be at risk of vehicle strike. Birds within the facility may be at risk of injury by striking panels or equipment (Impact BIO-5).

Direct impacts to special-status wildlife may occur along access roads and the gen-tie line, where brush trimming and removal of potential habitat is required. Where fencing is required along Lucerne Valley Cutoff, wildlife may get stranded, unable to find movement opportunities away from the road. O&M or decommissioning-related ground disturbance may result in direct crushing or burial where repairs or replacement are needed at the solar generation plant, towers and poles along the gen-tie line, or at culverts or drainages around Proposed Project facilities. Indirect O&M impacts to wildlife may occur from exposure to herbicides during weed control. Maintenance around facilities may temporarily increase human presence, opportunistic predators, noise, dust, and vehicle traffic, which may disrupt wildlife behavior or cause mortality.

Direct and indirect impacts to wildlife shelter, foraging, and breeding habitat from proposed solar generation plant O&M and decommissioning would be minimized, avoided, or offset with implementation of MMs BIO-1a through BIO-1g as described for Impact BIO-1. Additionally, direct and indirect impacts to wildlife during O&M and decommissioning would be minimized with MMs BIO-3a (Wildlife Protection), BIO-3b (Wildlife Relocation), BIO-3c (Protect Desert Tortoise), and BIO-3f (Bird and Bat Protection) as described for construction impacts.

Impact Conclusion. While 1,858 acres of wildlife habitat would be impacted, compensatory habitat would be permanently protected at a ratio of 1:1. No critical habitat is located on the Proposed Project site. Special-status wildlife occupying the Proposed Project site would be surveyed and identified, monitored, protected, and relocated as needed in the Proposed Project vicinity. Wildlife populations would not be substantially impacted or

caused to fall below self-sustaining levels. With implementation of recommended mitigation measures, Impact BIO-3 would be less than significant for construction, O&M, and decommissioning of the proposed solar generation plant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources. The Applicant shall undertake the following measures to avoid or minimize impacts to wildlife during construction, O&M, and decommissioning. The Lead Biologist shall oversee implementation of all measures, which are subject to review and approval by the CSLC.

- *Wildlife avoidance*. Project activities shall minimize interference with wildlife (include ground-dwelling species, birds, bats) by allowing animals to escape from a work site prior to disturbance; conducting pre-construction surveys and exclusion measures for certain species as specified in other measures.
- *Avoid use of toxic substances*. Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.
- *Water*. Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing water within closed tanks or covering open tanks with 2-centimeter netting, unless local fire policy states otherwise. Dust abatement shall use the minimum amount of water on unpaved roads and construction areas to meet safety and air quality standards. Water sources (e.g., hydrants, tanks, etc.) shall be managed to prevent puddles or ponding and periodic inspection should occur by biological monitors.
- *Trash*. All trash and food-related waste shall be contained in vehicles or covered trash containers inaccessible to ravens, coyotes, or other wildlife and removed from the site regularly.

- *Workers*. Workers shall not feed wildlife or bring pets, except for Americans with Disabilities Act (ADA) compliance animals, to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
- *Wildlife netting or exclusion fencing*. The Applicant may install temporary or permanent netting or fencing around equipment, work areas, or Project facilities to prevent wildlife exposure to hazards such as toxic materials, vehicle strikes, or to prevent birds from nesting on equipment or facilities. Bird deterrent netting shall be maintained free of holes and shall be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within the excess netting. If bird deterrents are installed, the biological monitor shall inspect netting twice daily, at the beginning and close of each workday. The biological monitor shall inspect exclusion fence (if installed) weekly.
- *Wildlife entrapment*. Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes and trenches shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate wildlife ramp or other means to allow trapped animals to escape. At the end of each workday, a biological monitor shall ensure that excavations have been secured or provided with appropriate means for wildlife escape. Biological monitors shall periodically inspect areas with high vehicle activity (e.g., roads, parking lots) for animals in harm's way and relocate them if necessary.
- *All pipes or other construction materials or supplies* shall be covered or capped in storage or laydown areas to prevent bird or other wildlife entry into pipes. No pipes or tubing will be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials shall be inspected for wildlife before it is moved, buried, or capped.
- *Dead or injured wildlife* shall be reported to USFWS (for federally listed species and migratory birds) and CDFW (for State listed species or other special-status wildlife) and/or the local animal control agency (for other wildlife species), as appropriate, by the Lead Biologist (or the Applicant's compliance manager during O&M). For special-status species or injured animals, reporting will be as soon as possible and no longer than 24 hours of discovery. For common species, reporting may be delayed until the next regular workday. For migratory birds, reporting will be as above or in accordance with an applicable USFWS Special Purpose Utility Permit. The carcass shall be safely moved out of the road or work area and removed for disposal or preserved as directed by the agency. If an animal is entrapped, a biological monitor or compliance manager shall free the animal if feasible, or work with construction crews to free it, in compliance with safety requirements, or work with animal control or CDFW to resolve the situation.

- *Pest control*. No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the project site, on off-site project facilities and activities, or in support of any other project activities.

MM BIO-3b: Relocate Special-status Wildlife Species. The Applicant shall prepare and implement a wildlife relocation plan to ensure that special-status wildlife species, including desert tortoise, burrowing owl, American badger, and desert kit fox, are safely avoided or relocated off the Project site prior to and during construction.

The Lead Biologist shall oversee implementation of the plan. The wildlife relocation plan shall conform to USFWS guidelines (USFWS 2020) for desert tortoise surveys, avoidance, and relocation, and CDFW staff guidance for burrowing owl, American badger, and desert kit fox passive relocation, including scheduling to avoid disturbance to natal dens or burrows.

The wildlife relocation plan will specify methodologies for pre-construction wildlife clearance surveys on the proposed solar fields and gen-tie routes; monitoring or tracking special-status species, burrows, or dens that may be located during the surveys; construction of off-site artificial burrows if needed; avoidance to allow for wildlife to safely move out of harm's way, or methods for localized "out of harm's way"; desert tortoise relocation; passive relocation methods for burrowing owl or desert kit fox; qualifications of field personnel who may handle desert tortoises; and follow-up monitoring of translocated animals.

The wildlife relocation plan shall specify detailed methods for passive relocation of burrowing owls, including construction of replacement burrows on land controlled by the Applicant if needed, and monitoring and management of the passive relocation including a three-year monitoring program.

The plan shall include protocols for communication with CDFW and USFWS for any relocations that may be needed during O&M.

The Plan must be reviewed and approved by the CSLC, USFWS, and CDFW at least 90 days prior to the start of ground-disturbing activities.

MM BIO-3c: Protect Desert Tortoise. No desert tortoise may be handled or relocated without authorization from USFWS and CDFW. The Applicant shall obtain incidental take authorization from both agencies to address any potential take of desert tortoise, including authorization to handle or translocate desert tortoise. Desert tortoises would be handled or translocated according to a wildlife relocation plan, to be prepared as specified in MM BIO-3b (Relocate Special-status Wildlife Species), pending approval by both agencies.

Authorized Personnel Roles and Titles. As defined in MM BIO-1a, Avangrid shall designate a USFWS Authorized Biologist to implement the desert tortoise protection

measures. The Authorized Biologist may (or may not) also serve as the project's Lead Biologist.

The Applicant shall employ one or more desert tortoise monitors who are qualified to conduct desert tortoise clearance surveys and who will be on-site during all construction. The desert tortoise monitors' qualifications will be subject to review and approval by the CSLC. Qualifications may include work as a compliance monitor on a project in desert tortoise habitat, work on desert tortoise trend plot or transect surveys, conducting surveys for desert tortoise, or other research or field work on desert tortoise. Attendance at a training course endorsed by the agencies (e.g., Desert Tortoise Council tortoise training workshop) is a supporting qualification.

The Authorized Biologist or Lead Biologist shall direct one or more desert tortoise monitors to conduct pre-construction clearance surveys for each work area, watch for tortoises wandering into the construction areas, check under vehicles, and examine excavations and other potential pitfalls for entrapped animals.

The Authorized Biologist or Lead Biologist will be responsible for overseeing compliance with desert tortoise protective measures and for coordination with resource agencies. The Authorized Biologist and Lead Biologist will have the authority to halt any Project activities that may risk take of a desert tortoise or that may be inconsistent with adopted mitigation measures or permit conditions. Neither the Authorized Biologist nor any other project employee or contractor may bar or limit any communications between CSLC, CDFW, or USFWS staff and any project biologist, biological monitor, or contracted biologist. Upon notification by the desert tortoise monitor or another biological monitor of any noncompliance the Authorized Biologist or Lead Biologist shall ensure that appropriate corrective action is taken.

Actions to Protect Desert Tortoise. The Applicant shall be responsible for implementing the following requirements, under direction of the Lead Biologist.

- *Preconstruction Clearance Survey*. Transects will be spaced 15 feet apart. Clearance will be considered complete after two successive 100-percent coverage surveys have been conducted without finding any desert tortoises. Clearance surveys must be conducted during the active season for desert tortoises (April through May or September through October). If a tortoise or an occupied tortoise burrow is located during clearance surveys, work activities will proceed only at the site and within a suitable buffer area after the tortoise has either moved away of its own accord, or if it has been translocated off the site under authorization by the USFWS and CDFW.
- *Tortoise exclusion fencing*. Prior to construction of solar and substation facilities, desert tortoise exclusion fencing or an effective border with below ground footing shall be installed around the solar generation plant and substation, and maintained throughout the life of the project. The fence shall adhere to USFWS design guidelines, where applicable. The Authorized Biologist or Lead Biologist shall

oversee a clearance survey within the tortoise fence to ensure no tortoises are in the fenced area according to USFWS pre-construction survey protocol (USFWS 2009). Any potentially occupied burrows shall be avoided until monitoring or field observations (e.g., with a motion-activated camera or fiber-optic mounted video camera) determines absence. If live tortoises or an occupied tortoise burrow are identified in the work area, tortoises shall be relocated under authorization by USFWS and CDFW or allowed to leave on their own accord before enclosing the fence. Once installed, exclusion fencing shall be inspected at least monthly and within 24 to 48 hours following all substantial rain events (i.e., rainfall that causes surface flow in washes that cross the fenceline), and corrective action taken if needed to maintain it. Fencing around each work area shall include a "cattle guard" or desert tortoise exclusion gate at each entry point. This gate shall remain closed, except when vehicles are entering or leaving the project area. If deemed necessary to leave the gate open for extended periods of time (e.g., during high traffic periods), the gate may be left open as long as a desert tortoise monitor is present to observe tortoise activity in the vicinity.

- *Work Within Unfenced Areas.* Any work conducted in an area that is not fenced to exclude desert tortoises (i.e., gen-tie work areas) must be monitored at all times by a desert tortoise monitor who will stop work if a tortoise enters the work area. Work activities will proceed only at the site and within a suitable buffer area after the tortoise has either moved away of its own accord, or if it has been translocated off-site under authorization by the USFWS and CDFW. Work sites with potential hazards to desert tortoise (e.g., auger holes, steep-sided depressions, trenches) that are outside of the desert tortoise exclusion fencing shall be covered, fenced by installing exclusionary fencing, or not left unfilled overnight. Makeshift ramps may be placed in holes to allow wildlife to escape.

- *Lucerne Valley Cutoff Monitoring and Avoidance.* Beginning when exclusion fencing is installed along Lucerne Valley Cutoff and continuing through the life of the project, Biological Monitors shall inspect the area between the fencelines to identify and relocate (if needed) any desert tortoise that may be within the narrow area and at risk of road mortality.

- *Inspect for Tortoises Under Vehicles.* During construction, O&M, and decommissioning the ground beneath vehicles parked outside of desert tortoise exclusion fencing shall be inspected immediately prior to the vehicle being moved. If a tortoise is found beneath a vehicle, the vehicle shall not be moved until the desert tortoise leaves of its own accord.

- *Protect Tortoises on Roads*. During construction and O&M, speed limits of 15 mph would be enforced. If a tortoise is observed on or near access roads or work and maintenance areas, vehicles shall stop to allow the tortoise to move away from the road on its own.

- *Stop Work After Tortoise Observations*. During construction, O&M, and decommissioning, any time a tortoise is observed within or near a work or maintenance site, Project work activities may proceed at the site and within a suitable buffer area only after the tortoise has either moved away of its own accord, or if it has been translocated off the site under authorization by the USFWS and CDFW. If a tortoise is observed outside of exclusion fencing, construction shall stop, and the tortoise shall be allowed to move out of the area on its own. If a tortoise or tortoise burrow is observed within the exclusion fencing, construction in the vicinity shall stop, pending translocation of the tortoise or other action as authorized by USFWS and CDFW.
- *Dead or Injured Specimens.* Upon locating a dead or injured tortoise, the Applicant or its agent shall immediately notify the Palm Springs or Ventura Fish and Wildlife Office by telephone within three days of the finding. Written notification to USFWS must be made within five days of the finding. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information.
- *Conditions Requiring Cessation of Work.* The Authorized Biologist and Lead Biologist shall have the authority to halt all Project activities that are in violation of mitigation measures or that may result in take of a desert tortoise. The following incidents will require immediate cessation of any Project activities that could harm a desert tortoise: (1) location of a desert tortoise within a work area; (2) imminent threat of injury or death to a desert tortoise; (3) unauthorized handling of a desert tortoise, regardless of intent; (4) operation of construction equipment or vehicles outside a Project area cleared of desert tortoise, except on designated roads; and (5) conducting any construction activity without a biological monitor where one is required.

MM BIO-3d: Protect Desert Kit Fox and American Badger. This measure supplements MM-BIO-3b (Wildlife Relocation) by specifying further protective measures regarding desert kit fox and American badger.

Relocation. Under direction of the Lead Biologist, biological monitors shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall also consider the potential presence of dens within 100 feet of the project boundary (including utility corridors and access roads) and shall be performed for each phase of construction if the Project is constructed in phases. If dens are detected each den shall then be further classified as inactive, potentially active, or definitely active. Inactive dens directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse. Potentially active dens directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium such as diatomaceous

medium or fire clay and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, dens shall be fitted with the one-way trap doors to encourage animals to move off-site. After 48 hours post installation, the den shall be excavated by hand and collapsed. Dens shall be collapsed prior to construction of the perimeter fence, to allow animals the opportunity to move off-site without impediment. If an active natal den is detected on the site, the CDFW shall be contacted within 24 hours. The course of action would depend on the age of the pups, location of the den site, status of the perimeter fence, and the pending construction activities proposed near the den. A 50-foot no disturbance buffer shall be maintained within the project boundary around all potential dens. A 100-foot no disturbance buffer is required around known dens. Buffers around natal dens would be identified in coordination with CDFW. Alternatively, a designated biologist authorized by CDFW shall trap and remove animals from occupied dens and move them off-site into appropriate habitat.

Minimize Likelihood of Transmitting Distemper. Additionally, the following measures are required to minimize the likelihood of distemper transmission:

- Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through the CDFW prior to use
- Any documented kit fox mortality shall be reported to the CDFW by the Lead Biologist within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers to the maximum extent practicable until the CDFW determines if the collection of necropsy samples is justified.

MM BIO-3e: Avoid Effects on Burrowing Owl. Burrowing owl protection and relocation shall incorporate the following requirements:

- Pre-construction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, white wash) shall be conducted throughout each work area no more than 14 days prior to construction
- Should any of the pre-construction surveys identify burrowing owl or active burrows within the solar generation plant, the Lead Biologist will coordinate with the Construction Contractor to implement avoidance and set-back distances. Disturbance of owls or occupied burrows during the breeding season (February 1 through August 31) will not be permitted.
- Any unoccupied suitable burrows within the project disturbance footprint shall be excavated and filled in under the supervision of the Lead Biologist prior to site preparation
- See also MM BIO-3b regarding burrowing owls, as discussed in the wildlife relocation plan

MM BIO-3f: Bird and Bat Protection. The Applicant will prepare and implement the following two documents to define and minimize potential impacts to protected birds and bats. Both documents must be reviewed and approved by CSLC staff prior to any vegetation clearing or ground disturbing activities.

1. **Bird and Bat Conservation Strategy (BBCS).** The Applicant shall prepare and implement a BBCS to avoid or minimize take of protected birds or special-status bats that may nest on the site or may be vulnerable to collision with project components. The Lead Biologist shall oversee implementation of the BBCS. The BBCS shall identify potential hazards to birds during construction, O&M, and decommissioning phases of the project and specify measures to recognize, minimize, or avoid those hazards. The BBCS shall articulate the Applicant's commitments to reduce risk to birds and bats. Over the course of construction and O&M, progress and challenges that are encountered may necessitate review or revision of the BBCS, on mutual agreement among the Applicant and the CSLC.

   The goals of the BBCS are to:

   - Provide an organized and cost-effective framework for compliance with state and federal laws and policies protecting birds and special-status bats
   - Specify record keeping, reporting, and communication procedures to document compliance
   - Foster a sense of stewardship with the Applicant and on-site staff

   Mortality Monitoring and Adaptive Management. The BBCS shall specify monitoring and conservation measures to be implemented by the Applicant to document bird or special-status bat mortality that may result from bird injury or mortality caused by collision with project components, including gen-tie line collisions. The BBCS shall include:

   - A statement of the Applicant's understanding of the importance of bird and bat safety and management's commitment to remain in compliance with relevant laws
   - Documentation of conservation measures to be implemented through design and operations to minimize bird and bat fatalities at the solar generation plant and gen-tie line
   - Consistent, practical and up-to-date direction to O&M staff on how to avoid, reduce, and monitor bird and bat fatalities
   - A 2-year O&M monitoring and reporting program for potential bird and bat fatalities
   - Identification of fatality thresholds that, if surpassed, would trigger adaptive management measures such as changes to Project O&M

- An adaptive management framework to be applied if thresholds are surpassed

2. **Nesting Bird Management Plan**. The Applicant shall prepare and implement a Nesting Bird Management Plan, to include nest surveys, avoidance and protection measures, and a reporting schedule. The project will either avoid vegetation clearing during the nesting season, or conduct pre-construction nest surveys of potential habitat and implement no-disturbance buffer areas around active nests.

Pre-activity surveys for active nests will be conducted by one or more biological monitors at the direction of the Lead Biologist. The biologists' qualifications will be subject to review and approval by the CSLC. Nest surveys shall be conducted for all project activities throughout the nesting season, identified here as beginning January 1 for raptors and hummingbirds and February 1 for other species, and continuing through August 15.

Nest surveys shall be completed at each work site no more than 7 days prior to initiation of site preparation or construction activities. Nest surveys shall cover all work sites, including the solar generation plant, substation, and gen-tie, and adjacent off-site habitat areas equivalent to the final NBMP buffer distances (or 1,200 feet for raptors and 250 feet for other species). If adjacent properties are not accessible to the field biologists, the off-site nest surveys may be conducted with binoculars. Any changes to survey areas will be determined in coordination with CDFW and USFWS through the NBMP.

The NBMP may identify species-specific buffer distances or variable distances, depending on activity levels (e.g., driving past the nest to access work sites may be less disruptive than foundation construction). At each active nest, a biological monitor will establish and mark a buffer area surrounding the nest, as outlined in the NBMP. Construction activities that could disrupt nesting behavior will be excluded within the buffer area. If buffers are not defined in the NBMP, buffer distances shall be 1,200 feet for most raptor (non-eagle) nests and 250 feet for most other species (including American kestrel). For golden eagles, a one-mile buffer around active nests shall be maintained per USFWS nest buffer guidelines (USFWS 2021). The golden eagle buffer may be reduced in coordination with USFWS when the nest is not in use or activities are not in line-of-sight of the nest. Any changes to buffer distances from the NBMP will be determined in coordination with CDFW and USFWS.

The extent of nest protection shall be based on proposed construction activities, species, human activities already underway when the nest is initiated (e.g., a house finch nest built in the eaves of an occupied structure would warrant less avoidance or protection than a loggerhead shrike nest build in native shrubland), topography, vegetation cover, and other factors. The avoidance and protection measures shall remain in effect until the nest is no longer active.

If for any reason a bird nest must be removed during the nesting season, the Applicant or its agent shall notify the CDFW and USFWS and retain written documentation of the correspondence. Nests will be removed only if they are inactive, or if an active nest presents a hazard to work activities, as defined in the NBMP.

MM BIO-3g: Implement Protective Design for Collector Lines and Gen-tie Lines. Gen-tie line support structures and other facility structures shall be designed in compliance with current APLIC (2006, 2012) standards and practices to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices) in high use areas. This design would also reduce the potential for increased predation of special-status species, such as the desert tortoise.

The following measures shall be implemented to minimize collision and electrocution:

- Mechanisms to visually warn birds (permanent markers or bird flight diverters) shall be placed on gen-tie lines at regular intervals in high-risk areas to prevent birds from colliding with the lines
- To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires shall be clearly marked with bird flight diverters to reduce the probability of collision.
- Shield wires shall be marked with devices that have been scientifically tested and found to significantly reduce the potential for bird collisions
- Gen-tie lines shall maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture).

MM NOI-1a: Minimize Noise During Construction. (Section 4.12, *Noise and Vibration*)

MM ALG-5: Minimize Night Lighting at Project Facilities. (Section 4.1, *Aesthetics/ Light and Glare*)

MM TRA-1: Construction Traffic Control Plan. (Section 4.17, *Traffic and Transportation*)

Impact BIO-4: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance that could cause nest abandonment.

The proposed solar generation plant could cause take or other adverse effects to nesting birds but this potential impact would be minimized through pre-construction monitoring and avoidance of active nests. **(Less than Significant with Mitigation)**

Impact Discussion

Construction. Potential impacts to nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code would be similar to those described in Impact BIO-3 for special-status birds; Construction activities are expected to occur during periods that overlap with the nesting season (February 1 [January 1 for raptors] through August 15) when birds may be vulnerable to nest disturbance.

Direct impacts to nesting birds could include loss of active nests, suitable shelter, foraging habitat, and food sources due to vegetation clearing and ground disturbance. Construction activities could cause disruption of nesting and foraging behavior due to a temporary increase in human presence, traffic, noise, vibration, dust, and opportunistic predators, leading to nest abandonment or loss of eggs or nestling birds.

Construction impacts to nesting birds would be minimized and avoided with implementation of MMs BIO-1a to -BIO-1g, as presented in Impact BIO-1. Mitigation measures would identify sensitive resources in the Proposed Project area and prevent disturbance of habitat outside approved boundaries. Direct permanent and temporary impacts to habitat would be compensated for and offset with revegetation and acquisition of compensation lands. Indirect impacts from weed infestation would be minimized with an IWMP.

Direct and indirect impacts to nesting birds would be minimized and avoided with MMs BIO-3a (Wildlife Protection), BIO-3b (Wildlife Relocation), BIO-3e (Avoid Effects on Burrowing Owl), and BIO-3f (Bird and Bat Protection), as presented in Impact BIO-3. Pre-construction surveys would identify nests for avoidance. Minimizing vegetation removal in the nesting season would reduce direct mortality of nesting birds and loss of nests. Where activities cannot be scheduled outside the nesting season, nest avoidance and buffer areas would minimize disturbance. Fencing of work areas and avoidance buffers around burrowing owl nests would minimize exposure to hazards and avoid direct impacts such as crushing and burial. Work area inspections and vehicle inspections would minimize the potential for loss of nests and direct impacts to nesting birds at work sites. Indirect impacts would be minimized and avoided with restrictions on night lighting, use of toxic substances, and noise and vibration levels and proper trash disposal. Wildlife relocation would avoid direct impacts to burrowing owls from crushing or burial of individuals or burrows during construction.

Operation and Maintenance and Decommissioning. After completion of construction, certain protected birds could nest on Proposed Project facilities. Common examples include house finches, and common ravens. Direct and indirect impacts to nesting birds could be similar to those described for Impact BIO-3. Impacts may occur on the facilities (e.g., structures, panel racks, gen-tie towers) and along access roads and the gen-tie line, where brush trimming and removal of potential habitat may be required. Access road and facilities maintenance may temporarily increase human presence, opportunistic predators, noise, dust, and vehicle traffic, which may disrupt nesting behavior or cause mortality.

Direct and indirect impacts to nesting habitat from proposed solar generation plant O&M would be minimized, avoided, or offset with implementation of MMs BIO-1d (Weed Management), MM BIO-1e (Revegetation), MM BIO-1f (Protect Important Plants), and MM BIO-1g (Compensate for Loss of Natural Habitat), as described for Impact BIO-1. Indirect impacts to wildlife habitat from weed infestation would be minimized with an IWMP. Direct permanent and temporary impacts to habitat would be compensated for and offset with revegetation and acquisition of compensation lands.

Direct and indirect O&M and decommissioning impacts to nesting birds would be minimized with MM BIO-3f (Bird and Bat Protection). Adaptive management and bird and bat mortality monitoring during O&M would reduce impacts to wildlife by modifying Proposed Project facilities or operations to minimize fatalities.

Impact Conclusion. The Proposed Project would either avoid vegetation clearing during the nesting season or conduct pre-construction nest surveys of potential habitat and implement no-disturbance buffer areas around active nests. Nests built on Proposed Project facilities or in nearby habitat would be monitored and avoided within a nest buffer. Proposed Project construction, O&M, and decommissioning is not expected to result in take or nest abandonment. With implementation of the recommended mitigation measures, Impact BIO-4 would be less than significant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3b: Relocate Special-status Wildlife Species

MM BIO-3e: Avoid Effects on Burrowing Owl

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-5: Create a substantial collision and electrocution risk for birds or bats.

Collision or electrocution hazards at the proposed solar generation plant would be minimized through mitigation measures specifying bird-safe design standards and rectified over time through monitoring and adaptive management. **(Less than Significant with Mitigation)**

Impact Discussion

The solar generation plant area currently has no existing overhead poles or conductors. There is no electric service to the nearby residences. As a result, all new overhead poles and conductors required for the Proposed Project would present new hazards to birds and bats.

Construction and Decommissioning. During construction and decommissioning, proposed solar generation plant, temporary structures, and construction equipment could present a collision hazard to birds or bats. Additionally, electrical components could cause electrocution of large birds during construction and testing.

***Operation and Maintenance*.** After completion of construction and throughout the life of the Proposed Project, the presence of the Stagecoach Facilities could result in bird or bat collision with overhead connector line conductors, solar arrays, substation equipment, or other Proposed Project components.

Lake Effect. The solar arrays may present a collision hazard to birds flying over the site, where birds may mistake panels for water bodies and consequently are attracted to them (referred to as “false lake effect”). If waterbirds land on the ground among the solar panels, they are unable to fly away, and are unlikely to survive, unless rescued. Increased glare from reflective solar panels may also alter wildlife behavior including foraging, migration, and breeding (BLM and CDFW 2014). Based on information from other solar projects in the California desert, project-related bird mortality is likely to range from a low of 0.4 birds per acre per year up to 1.7 birds per acre per year (BLM 2018b). These include birds injured by striking facilities (e.g., solar panels or gen-tie lines) and some species that can only take off from water bodies, as described for the “false lake effect.”

A collection of 13 fatality monitoring studies at PV solar generation plants in three bird conservation regions (BCRs) in California and Nevada have shown the highest percentage of fatalities across all studies were common species including mourning dove, horned lark, house finch, and western meadowlark. Passerines (55.0 percent) and doves/pigeons (17.0 percent), on average, are the most common detections (Kosciuch et al. 2020). Carcasses of water-associated birds (e.g., herons and egrets) and water obligate birds (e.g., loons and grebes) have been found at PV solar generation plants in the Sonoran and Mojave Deserts, primarily found at sites within 60 miles of the Salton Sea. Water associated (6.3 percent) and water obligate species (7.8 percent) each compose less than 10 percent of the detections. Raptors are very uncommon detections (less than 1.0 percent) (Kosciuch

2020; WEST 2020b). No large mortality events have been documented at PV solar generation plants.

Electrocution. Overhead connector lines or other electrical hardware, if insufficiently spaced, could present an electrocution risk to birds. Electrocution occurs when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a large bird attempts to perch on a transmission structure with insufficient clearance between these elements. Raptors, ravens, and other large birds often perch and nest on tall structures, including electrical transmission towers and poles. Golden eagles, peregrine falcons, and other large raptors are most susceptible to electrocution on transmission structures because of their size, distribution, and behavior (APLIC 2006; APLIC 2012). Consequently, the design characteristics of transmission structures are a major factor in bird electrocutions (APLIC 2006). The majority of raptor electrocutions are caused by lines that are energized at voltage levels between 1 kV and 69 kV because these low-voltage lines are relatively small with the conductors and hardware spaced relatively close together. The likelihood of electrocutions occurring at voltages greater than 69 kV is low due to the increased distance between energized components.

Collision. Bird collisions with powerlines generally occur when: (1) a power line or other aerial structure transects a daily flight path used by a concentration of birds, and (2) migrants are traveling at reduced altitudes and encounter tall structures in their path. Collision rates generally increase in low light conditions, fog, rain, snow, strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger. Collisions are more probable near wetlands, valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths.

Passerines (i.e., songbirds) and waterfowl may have a lower potential for collisions than larger birds, such as raptors, due to behavioral factors. Passerines and waterfowl tend to fly under power lines, as opposed to larger species, which generally fly over the lines and risk colliding with the higher static lines.

Data on the magnitude of collision-caused bird mortality, impacted bird species, and species movements in the Proposed Project vicinity are not available. However, it is generally expected that collision mortality would be greatest where the movements of susceptible species are the greatest, such as along migratory pathways, along waterways, or over agricultural areas.

The potential collision risk to bats from solar PV facilities and associated electrical components is poorly understood, but Harrison et al. (2017) recommend scientific research to evaluate any potential hazard.

Recommended Mitigation. Mitigation would reduce potential solar Proposed Project impacts from collision and electrocution during construction and O&M. Identifying and managing hazards and designing of gen-tie and other electrical components to meet

APLIC (Avian Power Line Interaction Committee) guidelines would minimize bird and bat collisions with gen-tie lines and other Proposed Project components by diverting birds and minimizing their movement across the proposed gen-tie routes. The following summarizes the MMs that are recommended for Impact BIO-5; the full text is presented under Impact BIO-3 above.

- **MM BIO-3f (Bird and Bat Protection).** Requires monitoring for death and injury of bird and bats and preparing an adaptive management program to be implemented if mortality thresholds are exceeded. Adaptive management would mitigate or minimize any substantial project-related mortality to the extent feasible.
- **MM BIO-3g (Implement Protective Designs for Collector Lines and Gen-tie Lines).** Solar generation plant collector lines and gen-tie lines would be designed in compliance with current APLIC standards and practices to minimize collision and electrocution hazard. Design requirements would include discouraging their use by raptors for perching or nesting, mechanisms to visually warn birds (permanent markers or bird flight diverters) on power lines, and sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture).

Impact Conclusion. The Proposed Project would implement industry standard protective designs for the solar generation plant substations and all overhead components to deter birds from approaching. Monitoring bird mortality and adaptively managing Stagecoach Facilities would be implemented to evaluate and minimize collisions. While bird fatalities may still occur due to collisions with Proposed Project facilities and equipment, the risk of substantial effects to avian populations is minimal. With implementation of recommended mitigation measures, Impact BIO-5 would be less than significant for the solar generation plant.

Mitigation Measures

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-6: Remove or degrade substantial acreage of riparian vegetation or sensitive vegetation communities identified as S1, S2, or S3, such that the community could be eliminated or its structure or function in the vicinity of the project would be substantially affected.

The proposed solar generation plant would substantially impact one sensitive vegetation community, Joshua tree woodland; this impact would be mitigated through off-site habitat compensation. **(Less than Significant with Mitigation)**

Impact Discussion

Construction. Impacts to Joshua tree woodland and Joshua trees are described in Impacts BIO-1 and BIO-2. No other sensitive community or riparian vegetation is found within the Proposed Project area. Potential impacts to non-sensitive -jurisdictional waters are discussed under Impact BIO-6. No riparian communities occur in the Proposed Project area.

The total acres of Proposed Project- ground disturbance within Joshua tree woodland are provided in Table 4.3-1 and shown on Figures 4.3-1a, 4.3-1b, and 4.3-1c.

Recommended Mitigation. By implementing MMs BIO-1a to BIO-1g, as described in Impact BIO-1, ground and vegetation disturbance and introduction of invasive species would be minimized. Impacts to habitat would be remediated or offset through revegetation and acquisition and protection of compensation lands.

O&M and Decommissioning. No direct impacts to Joshua tree woodland would occur during O&M or decommissioning. Potential indirect impacts to undisturbed Joshua tree woodland adjacent to the Proposed Project area from O&M would be similar to those described in Impact BIO-1, such as indirect effects from dust, erosion, or invasive weeds.

Recommended Mitigation. Indirect impacts to Joshua trees from invasive weeds would be minimized with implementation of MMs BIO-1d (Weed Management). Indirect impacts from dust and erosion would be minimized with MM BIO-1e (Revegetation), as described for Impact BIO-1.

Impact Conclusion. Approximately 190,000 acres of Joshua tree woodland are located within the BLM's California Desert Conservation Area, and 76,000 acres are located within the Pinto Lucerne Valley Subarea, which encompasses the Proposed Project area (BLM and CDFW 2014). Approximately 101 acres of Joshua tree woodland would be impacted on the Proposed Project site. To offset the loss of 398 Joshua trees, MM BIO-1g (Compensate for Loss of Natural Habitat) requires that Joshua trees be permanently protected on compensation lands at a ratio of 1.5:1.

Without mitigation, removal of Joshua tree woodland on the Proposed Project site would be a significant impact. However, the number of Joshua trees and acreage of Joshua tree woodland is relatively small in the larger context of the desert region. With implementation of the recommended mitigation measures, particularly off-site compensation, the net impact to Joshua trees and Joshua tree woodland would not be substantial and would be less than significant during construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

Impact BIO-7: Substantially impact jurisdictional wetlands or waters of the U.S. or waters of the State such that ecological structure or function of jurisdictional features in the vicinity of the project would be substantially affected.

The proposed solar generation plant would impact 11 State-jurisdictional features; the impact would be minimized through on-site measures and offset through off-site compensation. **(Less than Significant with Mitigation)**

Impact Discussion

Construction. State-jurisdictional stream channels in the proposed solar generation plant area convey water, sediment, and nutrients downstream to other habitats. Construction would directly and indirectly impact jurisdictional waters along ephemeral and sparsely vegetated washes. No wetlands were identified in the Proposed Project area. All the drainage features within the Proposed Project area drain to Lucerne Dry Lake and are not regulated as waters of the U.S. (ECORP 2020).

Clearing and grubbing, grading, earth-moving and excavation, trenching, and vehicle traffic, would cause direct impacts to jurisdictional waters such as rutting, sedimentation, or erosion in and around surface waters; and direct crushing, burial, or uprooting of associated vegetation. Water and sediment would be conveyed downslope by sheet flow or within channels after site preparation and Proposed Project construction. Surface flow patterns, velocities, and sediment loads may be altered throughout the site by solar panel foundations, access roads, and other Proposed Project features. Potential impacts to the unvegetated washes could include increased siltation, fluvial transport of silts or pollutants off-site via the ephemeral channels, or altered flows causing downstream erosion or eliminating natural transport of sands and water to downstream habitat areas.

Indirect impacts may occur from incidental introductions of invasive weeds that reduce habitat quality; from spillage of hazardous materials used during construction; and from introduction of sediment into waters, which would reduce water quality downstream. Note that impacts to water quality are described in Section 4.10.

The acreage of solar generation plant- disturbance to jurisdictional waters are provided in Table 4.3-1. At the solar generation plant, 11 features would be regulated under the Porter-Cologne Act and California Fish and Game Code section 1602. Although some impact areas may be temporarily disturbed, the effects to jurisdictional waters would be long-term or permanent in those areas due to land use as a solar generation plant.

Recommended Mitigation. By implementing MMs BIO-1a to -BIO-1g, direct and indirect impacts to vegetation and habitat in jurisdictional waters would be minimized, as discussed for Impact BIO-1 and summarized below. Management of invasive weeds would reduce indirect impacts to habitat and jurisdictional waters. Compensation for impacts to habitat, including jurisdictional waters, would be implemented through acquisition and protection of compensation lands. Waterways would also be protected with implementation of MM HAZ-1 (Hazardous Materials Training and Management Plan), as described in Section 4.9.4.1.

In addition, the following is a summary explaining how this mitigation measure would reduce impacts to jurisdictional waters in the Proposed Project area.

- **MM BIO-7a: Protect Streambeds and Watersheds.** Implementation of BMPs would prevent or minimize hazardous materials, construction debris, and mud, silt, or pollutants from entering drainages. Prohibiting maintenance and storage of vehicles in and near waters, containment kits, buffers around equipment maintenance, and immediate spill cleanup would be used to prevent oil leaks from contaminating waters. A Lake and Streambed Alteration Agreement (LSAA) from the CDFW and any applicable authorization from the RWQCB would direct BMPs and monitoring to avoid and minimize impacts to jurisdictional waters.

O&M and Decommissioning. O&M and decommissioning activities would mostly occur in areas previously disturbed by construction, such as the solar generation plant. Direct and indirect impacts to jurisdictional waters may occur from repairing or replacing underground cables, or other components; maintenance of associated access roads, drainages, and culverts; weed control; and tree and brush trimming. Any impacts to jurisdictional waters would be off lesser scale but otherwise similar to those described for construction. MM BIO-7a (Protect Streambeds and Watersheds) would prevent or minimize hazardous materials and debris from entering drainages as described for construction impacts.

Impact Conclusion. No wetlands or Waters of the U.S. are located in the Proposed Project area. The Proposed Project area includes State-jurisdictional ephemeral washes that would be protected with pollutant and debris BMPs. While approximately 1.3 acres of jurisdictional waters would be impacted, with implementation of recommended mitigation measures and off-site habitat compensation, Impact BIO-7 would be less than significant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-7a: Protect Streambeds and Watersheds. At least 60 days prior to the start of ground-disturbing activities or O&M activities in jurisdictional waters of the State, the Applicant shall obtain a Lake and Streambed Alteration Agreement from the CDFW and applicable authorization from the Colorado River Regional Water Quality Control Board.

The Applicant shall implement the following Best Management Practices (BMPs) to minimize adverse impacts to streambeds and watersheds.

- During construction and O&M, vehicles and equipment shall not be operated in ponded or flowing water except as specified by resource agencies
- The Applicant shall minimize road building, construction activities, and vegetation clearing within ephemeral drainages to the extent feasible
- The Applicant shall prevent water containing mud, silt, or other pollutants from grading or other activities from entering ephemeral drainages or being placed in locations that may be subjected to high storm flows
- Spoil sites shall not be located within 30 feet from the boundaries of drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering ephemeral drainages. The Applicant shall ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions are followed during all phases of the Project.
- When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high-water mark of any drainage during construction, operation, and decommissioning the Project.

- No equipment maintenance shall occur within 150 feet of any category 3, 4, or 5 streambed or any streambed greater than 10 feet wide and no petroleum products or other pollutants from the equipment shall be allowed to enter these areas or enter any off-site State-jurisdictional waters under any flow
- With the exception of the drainage control system installed for the Project, the installation of bridges, culverts, or other structures will be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts will be placed at or below stream channel grade.
- No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction, maintenance, or associated activity of whatever nature will be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, off-site State-jurisdictional waters
- During construction and O&M, stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage will be positioned over drip pans. Stationary heavy equipment will have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as brooms, absorbent pads, and skimmers will be on-site prior to the start of construction.

MM HAZ-1: Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-8:	**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.**
The proposed solar generation plant would interfere with wildlife movement across the valley floor where Proposed Project fencing prevents movement through the solar field, but extensive open space surrounding the site would continue to allow wildlife movement around the site. Mitigation measures would minimize indirect impacts to surrounding habitat **(Less than Significant with Mitigation)**	

Impact Discussion

Construction. Security fencing, desert tortoise exclusion fencing, and construction activities would prevent most terrestrial wildlife from entering or crossing the site. Access to nursery sites (i.e., dens, burrows, or nests) within or beyond the fenced area would be impeded. Note that exclusion fencing is intended to protect wildlife from entering the site where it is at risk of injury or mortality; the interruption of wildlife movement across the site is a necessary consequence of reducing this risk. Construction activities may also cause temporary and localized disruption of movement in adjacent lands by resident or migratory wildlife or wildlife behavior due to increased noise, vibration, light, dust, equipment, human

presence, and opportunistic predators in work areas. Increased equipment and vehicle traffic may result in increased wildlife strikes in the vicinity of habitat corridors.

There would be no effects to native resident or migratory fish. Movement of birds flying through the Proposed Project area may be impacted from striking solar generation plants as discussed in Impact BIO-5.

Several desert habitat linkage models identify the Proposed Project site and vicinity within linkage habitat for a variety of species (Spencer et al. 2010; Averill-Murray et al. 2013; Penrod et al. 2012). While limited guidance is available on necessary linkage widths, it is recommended that minimum widths for “corridor dwellers,” such as the desert tortoise that may take multiple generations to move regionally, should be substantially larger than a home range diameter (Averill-Murray et al. 2013).

Four BLM ACECs surround the proposed solar generation plant (see Wildlife Movement under Section 4.3.1.3 and Figure 4.3-6, Wildlife Movement). These ACECs were established by BLM to protect wildlife habitat and regional habitat linkage, and management policies for each of them prioritizes wildlife connectivity. In addition, the site is also surrounded by thousands of acres of undeveloped state and private land that would continue to be available for wildlife movement, including suitable desert tortoise habitat.

The Proposed Project site and surrounding area were categorized as a Development Focus Area (DFA) in the preferred alternative in the DRECP Draft EIR/EIS (BLM and CDFW 2014). This DFA overlapped with fragmented linkage habitat and intact linkage habitat within the DRECP Desert Linkage Network, adjacent to the Ord-Rodman Desert Wildlife Management Area (DWMA).

As described in the DRECP Draft EIR/EIS, the portion of Upper Lucerne Valley, north of Highway 247, within the DFA, comprises large areas of intact desert tortoise habitat that are contiguous with the Ord-Rodman DWMA and a Future Assessment Area south of Highway 247. In addition, the DFA portions of this intact linkage habitat comprise the areas of highest habitat potential. Other portions of the intact habitat north of Highway 247 are more marginal and include more mountainous areas like Stoddard Ridge that are likely to contain fewer desert tortoises than that found in the DFA itself. These areas include the Northern Lucerne Wildlife Linkage ACEC. The Draft EIR/EIS notes that preservation of the intact valley floor habitat in the Upper Lucerne Valley would provide more suitable linkage for desert tortoise through the area (Appendix D: Reserve Design Development Process and Methods; in Attachment B: Desert Tortoise Linkage Evaluations – Ord-Rodman Linkages (2013), under Reserve Recommendations 6). Note that the Ord-Rodman DWMA and future assessment area identified in the Draft EIR/EIS are now designated as BLM ACECs, Section 4.3.1.2, *Environmental Setting of the Stagecoach Solar Generation Plant*, under the heading *Wildlife Movement*.

Based on this, the DRECP Draft EIR/EIS (Appendix D; in Attachment B: Desert Tortoise Linkage Evaluations – Ord-Rodman Linkages (2013), under DFA Recommendations 3 and 4) recommended stringent conservation management actions and high mitigation ratios in this DFA. The mitigation package recommended in the following paragraphs is consistent with that approach.

While the Proposed Project fencing would impede individual animals from crossing through the Proposed Project area at a local level, the Proposed Project is not so large as to affect population movement in the region.

Recommended Mitigation. Construction impacts to habitat used for wildlife movement outside the solar generation plant would be minimized or avoided with provisions of MMs BIO-1a to BIO-1g, as discussed in Impacts BIO-1. Direct impacts to wildlife movement from entrapment in and around construction facilities would be minimized with implementation of MM BIO-3a, as discussed in Impact BIO-3. Retention and management of vegetation within the solar generation plant, per the low impact design in MM BIO-1c, would allow small reptiles, mammals and birds to continue to forage in and move through the Proposed Project site.

O&M and Decommissioning. Maintenance and decommissioning of the facilities and access road would increase human presence, opportunistic predators, noise, dust, and vehicle traffic, which may disrupt movement behavior or cause mortality. Some repairs and maintenance may require ground disturbance in new or restored areas, which could result in impacts to corridor habitat and direct impacts to wildlife.

Wildlife passage fencing, which would leave a gap in the fence along the ground to permit passage of small wildlife, was considered. This fence design could allow some reptiles and small mammals (i.e., desert tortoise and desert kit fox) to access, use, and move through the site. However, wildlife passage fencing would create a risk to wildlife because of the ongoing O&M activities occurring within the fenceline. This fencing option was discussed with the USFWS, who recommended that this Proposed Project retain the desert tortoise exclusion fencing installed before construction, rather than wildlife passage fencing. Therefore, exclusion fencing was determined to be the most effective means of protecting desert tortoises in and around the Proposed Project area during O&M.

Fencing around the proposed solar generation plant throughout the life of the Proposed Project would permanently impede wildlife movement across the site for many species, including desert tortoise. Small mammals and reptiles may be able to pass through the fencing, and birds may fly over into construction and O&M areas. Movement of larger wildlife would be restricted through the fenced Proposed Project area. Open space in surrounding BLM ACECs and undeveloped state and private lands would continue to provide movement habitat.

Direct and indirect impacts from solar generation plant O&M and decommissioning would be minimized, avoided, or offset by MM BIO-1d (Weed Management), MM BIO-1e (Revegetation), and MM BIO-1g (Compensate for Loss of Natural Habitat), as described for Impact BIO-1. Indirect impacts to habitat from weed infestation would be minimized with an IWMP. Direct permanent and temporary impacts to habitat would be compensated for and offset with revegetation and acquisition of compensation lands, which would ensure wildlife access to off-site habitat at the compensation site.

Impact Conclusion. Construction of the proposed solar generation plant would result in a permanent net loss of desert shrubland habitat that supports wildlife movement and permanent fencing around the solar generation plant would impede movement of large mammals. However, large natural open space surrounds the Proposed Project site. Surrounding BLM ACECs encompass over 300,000 acres and are managed to protect wildlife habitat and regional habitat linkages. Wildlife movement habitat is protected within the ACECs would continue to provide population-level connection between surrounding occupied habitat areas. In addition, the site is also surrounded by thousands of acres of undeveloped state and private land that would continue to be available for wildlife movement.

Impacts to wildlife movement habitat would be minimized with MMs BIO-1a through BIO-1f and offset with the mitigation requirement for acquisition of compensatory mitigation lands (MM BIO-1g). The loss of 1,858 acres of habitat (see Table 4.3-1) would be offset by the permanent preservation and management of comparable habitat at a ratio of 1:1, which would be permanently protected through funding by the Applicant. MMs BIO-3a, BIO-3c, BIO-3f, and BIO-3g would minimize and avoid impacts to wildlife movement, including for desert tortoise, birds, and bats. Although the proposed solar generation plant would impede individual animals from crossing the site, the impacts to population-level accessibility would not be substantial. With implementation of the recommended mitigation measures, Impact BIO-8 would be less than significant for construction, O&M, and decommissioning of the proposed solar generation plant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3c: Protect Desert Tortoise

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-9: Conflict with local policies or ordinances protecting biological resources.

Potential impacts to County-protected resources would be reduced with implementation of recommended mitigation measures. **(Less than Significant with Mitigation)**

Impact Discussion

Construction, O&M, and Decommissioning. San Bernardino County policies and ordinances protecting natural resources are identified in Section 4.3.2. These policies outline goals for preservation of biological resources and important habitat, protection and conservation of specified desert plants, coordination with state and federal agencies to preserve rare and endangered species, and future use, development, and recreation in County communities. The Natural Resources Element of the General Plan establishes policies that preserve and enhance natural resources and provide guidance on the location of new development to protect them. These policies support the County's overall goal of an interconnected landscape of open spaces and habitat areas that promote biodiversity and healthy ecosystems. However, State lands are not subject to County policies, so where the Development Code protects Joshua trees on private lands, it does not apply to the Proposed Project on State-owned lands (Chapter 88.01.030).

Impact Conclusion. All potentially significant impacts to biological resources in the Proposed Project area, including the resources identified and protected in the County General Plan, have been identified and would be minimized with mitigation measures as described in Impact BIO-1 through Impact BIO-8 (Section 4.3.4.1). With these measures, Impact BIO-9 would be less than significant for construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3c: Protect Desert Tortoise

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

MM BIO-7a: Protect Streambeds and Watersheds

Impact BIO-10: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

There are no adopted NCCPs or HCPs that overlap the proposed solar generation plant site. **(No Impact)**

Impact Discussion

Construction, O&M, and Decommissioning. The proposed solar generation plant site is not within an area covered by an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan. The Town of Apple Valley and San Bernardino County (2016) are preparing the proposed Apple Valley MSHCP/NCCP. The proposed solar generation plant area lies within the proposed boundaries for the Apple Valley MSHCP/NCCP (Figure 4.3-7, Apple Valley MSHCP/NCCP). A Notice of Preparation (NOP) of an Environmental Impact Report (EIR) was published on March 30, 2021. Publication of the Draft EIR and Plan is expected in the summer of 2021.

Because the Draft MSHCP/NCCP has not been published, this EIR cannot evaluate potential conflicts with land use designations or conservation strategies that may be identified in the future. However, the authors of the Apple Valley MSHCP/NCCP have indicated to CSLC staff that the Proposed Project is located in an area that may be important in wildlife moving between large open space areas that area protected by BLM-defined Areas of Critical Environmental Concern. The proposed solar generation plant's impacts to wildlife movement are described, and applicable mitigation measures are identified, under Impact BIO-8.

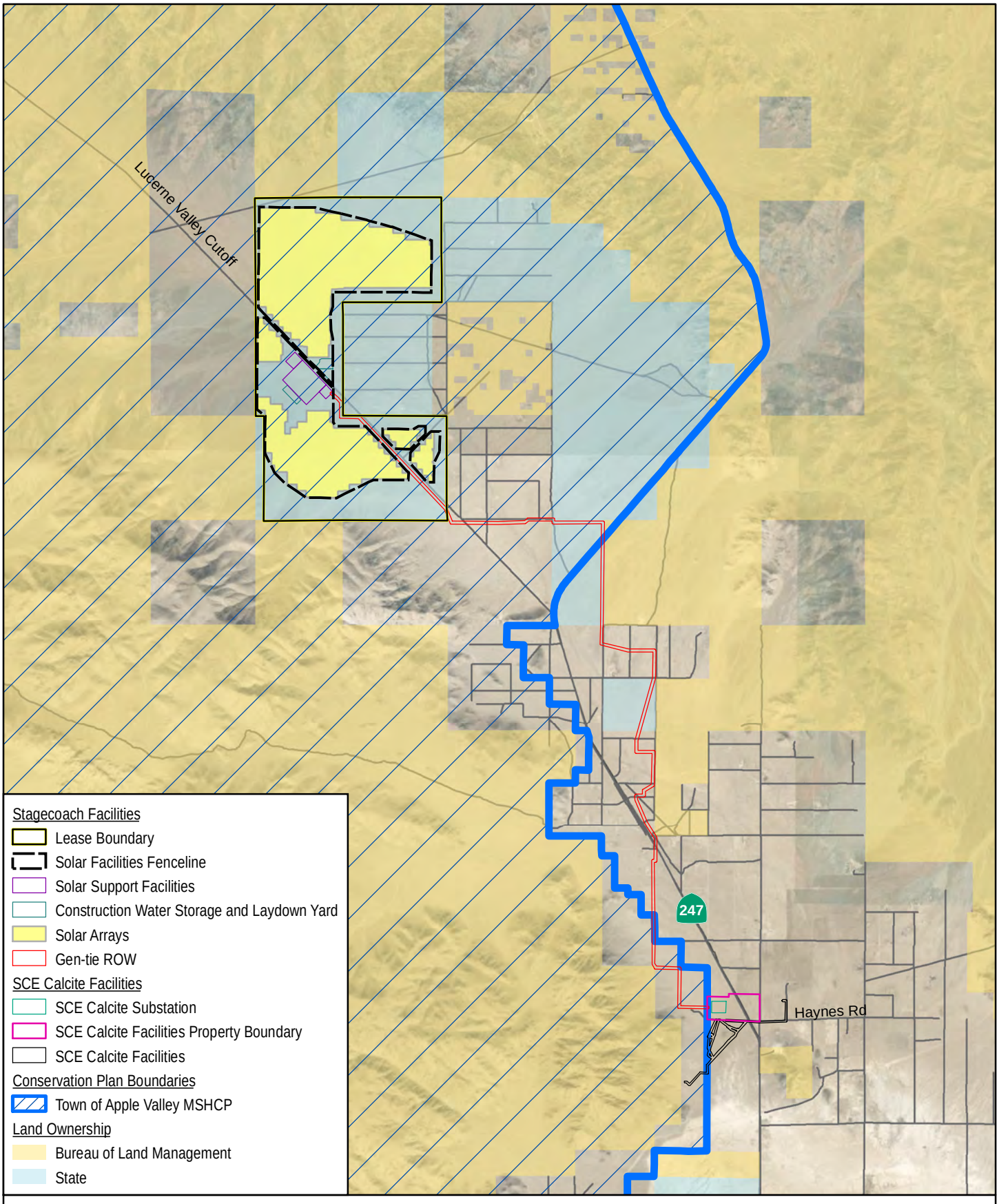


Figure 4.3-7

Apple Valley
MSHCP/NCCP

The authors of the Apple Valley MSHCP/NCCP have indicated to CSLC staff that the vicinity of the proposed solar site may be important in wildlife movement between large open space areas. The CSLC submitted a comment letter in response to the March 2021 NOP, stating: "the CSLC has not been part of the planning process for the Apple Valley MSHCP/NCCP and is not a signatory to the Planning Agreement entered into by the Town of Apple Valley pursuant to Fish and Game Code section 2810. Because the CSLC is not a Party to the Apple Valley MSHCP/NCCP, it is important that the Plan avoid relying on State-owned lands and its associated habitats within the Plan Area as a means of meeting the Plan's conservation objectives, and State-owned lands located within the Plan boundaries should not be designated in the Plan as habitat reserves."

State lands are not subject to local regulation and will not be subject to the Plan's terms or conditions if and when it is finalized and adopted. Because the MSHCP/NCCP has not been adopted, there is no potential for conflict and no impacts to adopted HCPs or NCCPs would occur for the solar generation plant.

Mitigation Measures

None required.

4.3.4.2 Impacts of the Stagecoach Gen-tie Line

Impact BIO-1: Substantially reduce habitat for a fish or wildlife species.

The proposed gen-tie line's impacts to wildlife habitat would be minimized through multiple mitigation measures and offset through permanent set-aside and management of compensation lands. **(Less than Significant with Mitigation)**

Impact Discussion

The discussion of Impact BIO-1 in Section 4.3.4.1, *Stagecoach Generation Facilities,* applies also to the proposed gen-tie line. Gen-tie construction would not affect most of the vegetation and habitat within the gen-tie routes. Impacts to vegetation would occur due to construction and use of a new access road paralleling the gen-tie, and at discrete disturbance sites where towers or other work activities would be located. However, due to the uncertainty about the specific location of these disturbance areas within the right-of-way, this analysis conservatively assumes the loss of all habitat within the gen-tie right-of-way, or 166 acres (see Table 4.3-1).

Direct and indirect impacts to vegetation from gen-tie construction would be minimized, avoided, or offset with implementation of MMs BIO-1a to BIO-1g, presented in full in Section 4.3.4.1 for the Proposed Project under Impact BIO-1. Mitigation measures would identify sensitive resources in the Proposed Project area and prevent disturbance of vegetation outside approved boundaries. Direct permanent and temporary impacts would

be compensated for and offset with revegetation and acquisition of compensation lands. Indirect impacts to vegetation from weed infestation would be minimized with an IWMP.

Impact Conclusion. While construction of the proposed gen-tie line would result in a permanent net loss of desert shrubland habitat along the gen-tie alignment, impacts would be minimal and located in discrete areas where towers are constructed and in temporary staging areas that would be revegetated.

Natural open space, including BLM ACECs, surrounds the Proposed Project site (see Impact BIO-1 under Section 4.3.4.2). Critical habitat is not located within the Proposed Project area.

Impacts would be minimized with MMs BIO-1a through BIO-1f, as well as HAZ-1, and offset with the mitigation requirement for acquisition of compensatory mitigation lands (MM BIO-1g). The habitat loss of 166 acres (see Table 4.3-1) would be offset by the permanent preservation and management of comparable habitat at a ratio of 1:1, which would be permanently protected through funding by the Applicant. Due to the discrete nature of the impact, in the context of extensive public open space throughout the region, and with implementation of the recommended mitigation measures, Impact BIO-1 would be less than significant and habitat for fish and wildlife species would not be substantially reduced during construction, O&M, and decommissioning of the proposed gen-tie line.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM HAZ-1: Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-2:	**Substantially affect state or federally listed threatened or endangered plants, California Rare Plant Rank 1 or 2 plants, or locally significant populations of other non-listed special-status plants by causing take of a listed species or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species.**
No Joshua trees are present within the proposed gen-tie right-of-way; Mojave monkeyflower, while not observed, could be present in small numbers and impacts, if any, would be minimized through implementation of recommended mitigation measures. **(Less than Significant with Mitigation)**	

Impact Discussion

No federally or State listed plant species have potential to occur along the gen-tie line, and no Joshua trees were located on the proposed gen-tie route during the field inventory. Mojave monkeyflower (CRPR 1B.2) could occur on the route in a year of differing weather patterns. However, as described in Section 4.3.4.1, *Stagecoach Solar Generation Plant*, it is not expected to occur in substantial numbers. As a result, direct impacts, if any, would be less than significant. Potential indirect impacts to Mojave monkeyflower (if present) would be as described for the proposed solar generation plant and may include scour of plants from runoff, sedimentation, and erosion around work areas, disruption of photosynthesis from fugitive dust, and incidental introductions of invasive weeds.

Direct and indirect impacts to potential special-status plant habitat would be minimized, avoided, or offset with implementation of MMs BIO-1a to BIO-1e and BIO-1g, presented in full in Section 4.3.4.1, *Stagecoach Solar Generation Plant,* for Impact BIO-1.

Impact Conclusion. No Joshua trees or other special-status plants were observed along the gen-tie line. No critical habitat for special-status plants is located within the Proposed Project area. With implementation of the recommended mitigation measures and off-site compensation, impacts of the proposed gen-tie line to potential special-status plants would be less than significant for construction, O&M, and decommissioning of the proposed gen-tie line.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1g: Compensate for Loss of Natural Habitat

Impact BIO-3: Substantially affect state fully protected wildlife species, state or federally listed threatened or endangered wildlife, California Species of Special Concern, or state ranked S1, S2, or S3 special-status wildlife by causing take or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species or cause the local population to drop below self-sustaining levels.

Impacts of the proposed gen-tie to special-status wildlife, including desert tortoise, would be mitigated through a series of avoidance and protection measures and offset by habitat preservation. **(Less than Significant with Mitigation)**

Impact Discussion

The discussion of Impact BIO-3 in Section 4.3.4.1, *Stagecoach Generation Facilities,* also applies to the gen-tie line. While construction would result in impacts along the gen-tie alignment, impacts would be minimal and located in discrete areas where towers are constructed and in temporary staging areas that would be revegetated.

Ground disturbance may also result during the O&M phase, where direct crushing or burial of wildlife could occur during repair or replacement of structures along the gen-tie line.

As discussed for the solar generation plant, one federally and State listed species, desert tortoise, is present. The State listed Swainson's hawk is present (flying over during migration). Site preparation would remove habitat for both species. Increased activity may directly impact desert tortoise in the Proposed Project area, resulting in injury or mortality. Ground dwelling wildlife would be able to freely move under powerlines along the gen-tie lines; large raptors may suffer mortality after collision with the gen-tie line or other facilities.

As described in Impact BIO-3 for the solar generation plant, while suitable habitat is present for MGS, they are not expected to occur based on distance to known trapping occurrences, MGS geographic range, and lack of occurrences in the vicinity since 1955. None were observed during protocol surveys of the nearby SCE Calcite Facilities in 2017. No impact to Mohave ground squirrel is expected.

Impact Conclusion. While 166 acres of wildlife habitat would be impacted along the gen-tie line, compensatory habitat would be permanently protected at a ratio of 1:1. Temporarily impacted areas would be revegetated. No critical habitat is located on the Proposed Project site. Special-status wildlife occupying the Proposed Project site would be identified, monitored, protected, and relocated in the Proposed Project vicinity. Wildlife populations would not be substantially impacted or caused to fall below self-sustaining levels. With

implementation of recommended mitigation measures, Impact BIO-3 would be less than significant for construction, O&M, and decommissioning of the proposed gen-tie line.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3b: Relocate Special-status Wildlife Species

MM BIO-3c: Protect Desert Tortoise

MM BIO-3d: Protect Desert Kit Fox and American Badger

MM BIO-3e: Avoid Effects on Burrowing Owl

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

MM NOI-1a: Minimize Noise During Construction. (Section 4.12, *Noise and Vibration*)

MM ALG-5: Minimize Night Lighting at Project Facilities. (Section 4.1, *Aesthetics/ Light and Glare*)

MM TRA-1: Construction Traffic Control Plan. (Section 4.17, *Traffic and Transportation*)

Impact BIO-4: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance, which could cause nest abandonment.

Impacts of the proposed gen-tie to nesting birds would be mitigated through a series of avoidance and protection measures and offset by habitat preservation. **(Less than Significant with Mitigation)**

Impact Discussion

The discussion of Impact BIO-4 in Section 4.3.4.1, *Stagecoach Generation Facilities,* applies also to the gen-tie line, except that the gen-tie disturbance area would be limited to a series of small sites where each structure would be constructed. Direct impacts to nesting birds during construction, O&M, or decommissioning could include loss of active nests, suitable shelter, foraging habitat, and food sources due to vegetation clearing and ground disturbance. Indirect impacts to nesting birds may occur due to spread of non-native invasive plants or to increased human presence, traffic, noise, vibration, dust, and opportunistic predators,

Impact Conclusion. Recommended mitigation would ensure that the Proposed Project would either avoid vegetation clearing during the nesting season, or conduct pre-construction nest surveys of potential habitat and implement non-disturbance buffer areas around active nests. Nests built on Proposed Project facilities or in nearby habitat would be monitored and avoided within a nest buffer. Proposed Project construction, O&M, and decommissioning is not expected to result in take or nest abandonment. With implementation of the recommended mitigation measures, Impact BIO-4 would be less than significant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3b: Relocate Special-status Wildlife Species

MM BIO-3e: Avoid Effects on Burrowing Owl

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-5: Create a substantial collision and electrocution risk for birds or bats.

Collision or electrocution hazards at the proposed gen-tie line would be minimized through mitigation measures specifying bird-safe design standards and rectified over time through monitoring and adaptive management. **(Less than Significant with Mitigation)**

Impact Discussion

Currently, the Proposed Project area and vicinity have few overhead lines, with electric distribution lines present only along the southern half of the gen-tie corridor. As discussed in Section 4.3.4.1, introducing transmission towers and conductors would create a new potential for collision along the 9mile route, presenting a new hazard to birds and bats in the area. Overhead connector lines or other electrical hardware, if insufficiently spaced, also present an electrocution risk to birds.

The discussion of Impact BIO-5 regarding electrical hardware and overhead lines in Section 4.3.4.1 applies also to the proposed gen-tie line. The gen-tie structures, lines, and conductors would present a collision risk to birds.

Impact Conclusion. The Proposed Project would implement industry standard protective designs for transmission lines to deter birds from approaching and monitor bird mortality and adaptively manage Proposed Project facilities to minimize collisions. While bird fatalities may be expected to occur due to collisions with Proposed Project facilities and equipment, this risk is not expected to result in substantial effects to avian populations as a whole. Golden eagles nest in the mountains surrounding the Proposed Project area within one mile and use the Proposed Project area for foraging, and may be at risk of collision with gen-tie lines due to their large size. While the introduction of overheard lines would present a new collision hazard in the Proposed Project area, the impact to birds and bats under Impact BIO-5 would be less than significant with implementation of the mitigation measures defined below.

Mitigation Measures

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-6: Remove or degrade substantial acreage of riparian vegetation or sensitive vegetation communities identified as S1, S2, or S3, such that the community could be eliminated or its structure or function in the vicinity of the project would be substantially affected,

No riparian vegetation or sensitive communities occur in the Stagecoach Gen-tie Line area. **(No impact)**

Impact Discussion

No Joshua tree woodland or other sensitive communities or riparian vegetation occur in the Stagecoach Gen-tie Line area.

Mitigation Measures

No mitigation would be required.

Impact BIO-7: Substantially impact jurisdictional wetlands or waters of the U.S. or waters of the State such that ecological structure or function of jurisdictional features in the vicinity of the project would be substantially affected.

The proposed gen-tie line would impact eight State-jurisdictional features, which would be minimized through on-site measures and offset through off-site compensation. **(Less than Significant with Mitigation)**

Impact Discussion

Along the gen-tie line, impacts to eight features would be regulated under the Porter-Cologne Act and California Fish and Game Code section 1602. The discussion of direct and indirect impacts Section 4.3.4.1, *Stagecoach Solar Generation Plant,* under Impact BIO-7 also applies to the proposed gen-tie line, except that the gen-tie disturbance would be limited to small access road crossings or construction sites. Construction along the gen-tie line would affect jurisdictional waters at discrete disturbance sites where towers, trenching, or other work activities would be located.

Impact Conclusion. No wetlands or Waters of the U.S. are located in the Proposed Project area. The Proposed Project area includes State-jurisdictional ephemeral washes that would be protected with pollutant and debris BMPs. While approximately 0.2 acres of jurisdictional waters would be impacted, with implementation of recommended mitigation measures and off-site habitat compensation, Impact- BIO-7 would not have cause substantial loss or impacts to State-jurisdictional waters and would be less than significant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-7a: Protect Streambeds and Watersheds

MM HAZ-1: Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-8:	**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.**
Wildlife would be temporarily impeded from crossing the proposed gen-tie line activity sites and mitigation measures would minimize impacts to movement. **(Less than Significant with Mitigation)**	

Impact Discussion

During construction and decommissioning, terrestrial wildlife movement may be temporarily impeded by construction vehicles located at discrete work areas along the gen-tie line, but animals would still be able to move freely between these work sites. Mitigation measures would ensure that access to nursery sites (i.e., dens, burrows, or nests) would not be impeded. Once the gen-tie is installed, O&M on the gen-tie line would have minimal effects on terrestrial wildlife movement. Wildlife would be able to move beneath the gen-tie line unimpeded and movement would not be restricted by fencing. Impacts to bird and bat movement due to collision and electrocution with overhead lines are discussed in Impact BIO-5.

Impact Conclusion. Construction of the proposed gen-tie would occur all along the 9.1mile corridor, but would be most intense at discrete sites. Temporary impact sites would be revegetated, and terrestrial wildlife movement would not be impeded under the gen-tie line. Critical habitat is not located within the Proposed Project area.

Natural open space that supports wildlife movement surrounds the Proposed Project site in millions of acres in the DRECP Plan Area and in BLM's ACECs. Of this, approximately 166 acres of habitat would be impacted for the gen-tie corridor (see Table 4.3-1). This loss would be offset by the permanent preservation and management of comparable habitat at a ratio of 1:1, which would be permanently protected through funding by the Applicant (MM BIO-1g).

MMs BIO-3a, BIO-3c, BIO-3f, and BIO-3g would minimize and avoid impacts to localized wildlife movement on the site through surveys, monitoring, and inspections.

Given the extensive public, private, and State open space throughout the region, the future unimpeded movement below the lines, and with implementation of recommended

mitigation measures, Impact BIO-8 would be less than significant. Impacts to movement of wildlife species would not be substantially impeded during construction, O&M, and decommissioning of the proposed gen-tie.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3c: Protect Desert Tortoise

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-9: Conflict with local policies or ordinances protecting biological resources.

Potential impacts to County-protected resources would be reduced with implementation of recommended mitigation measures. **(Less than Significant with Mitigation)**

Impact Discussion

Approximately 3 miles of the 9.1-mile-long gen-tie line would be located on State-owned land; the remaining 6 miles would be on private land within unincorporated San Bernardino County and would be subject to the provisions of the County General Plan and Development Code. These provisions address protection of natural resources, but the General Plan does not specifically govern or control installation of a gen-tie line.

***Construction, O&M, and Decommissioning*.** San Bernardino County policies and ordinances protecting natural resources are identified in Section 4.3.2. These policies outline goals for preservation of biological resources and important habitat, protection and conservation of specified desert plants, coordination with state and federal agencies to preserve rare and endangered species, and future use, development, and recreation in County communities.

The Natural Resources Element of the General Plan establishes policies that preserve and enhance natural resources and provide guidance on the location of new development to protect them. These policies support the overall goal of an interconnected landscape of open spaces and habitat areas that promote biodiversity and healthy ecosystems.

The Development Code (Chapter 88.01.030) protects Joshua trees on private lands, but there are no Joshua trees on the gen-tie route. Proposed Project activities would impact biological resources on 6 miles of the privately owned gen-tie route, including desert habitat, special-status plants and wildlife, sensitive habitats, and waters of the State. Impacts would be minimized and mitigated through mitigation measures identified in Section 4.3.4.1.

Impact Conclusion. Consistent with San Bernardino County policies, potential significant impacts to biological resources on private land have been identified and would be mitigated. No Joshua trees are located in the Proposed Project area. With implementation of recommended mitigation measures (see full text in Section 4.3.4.1 under Impacts BIO-1 through BIO-8), the Proposed Project would be consistent with local policies and Impact BIO-9 would be less than significant for construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3c: Protect Desert Tortoise

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

MM BIO-7a: Protect Streambeds and Watersheds

Impact BIO-10: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

There are no adopted NCCPs or HCPs that overlap the proposed gen-tie route. **(No Impact)**

Impact Discussion

The proposed gen-tie line is not currently within an area covered by an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.

The Apple Valley MSHCP/NCCP is proposed, but not yet adopted and is described under Impact BIO-10 in Section 4.3.4.1. As shown on Figure 4.3-7, Apple Valley MSHCP/NCCP, portions of the proposed gen-tie line are located within the proposed boundaries for the Apple Valley MSHCP/NCCP. Approximately 1.5 miles of the route just east of the proposed solar generation plant on private lands (1 mile) and State lands (0.5 miles), and approximately 1 mile of the route just west of the proposed SCE Calcite Substation site on private lands would be within the MSHCP/NCCP boundaries.

Publication of the Draft Apple Valley Plan and Draft EIR is expected in the summer of 2021, followed by review of public comments and development of a Final Plan and Final EIR. Because the MSHCP/NCCP has not yet been adopted, there is no conflict, and no impacts related to adopted HCPs or NCCPs would occur. A potential conflict could exist along the gen-tie on private lands should the MSHCP be adopted prior to Proposed Project approval.

The authors of the Apple Valley MSHCP/NCCP have indicated to CSLC staff that the Stagecoach Solar Generation Plant may be important in wildlife movement between large open space areas. The potential effects of the gen-tie line on wildlife movement are described, and applicable mitigation measures are identified, under Impact BIO-8.

Mitigation Measures

No mitigation would be required.

4.3.4.3 Impacts of the SCE Calcite Facilities

The SCE Calcite Facilities would be constructed by SCE, if approved by the California Public Utilities Commission (CPUC). The CPUC will use this EIR to support its review of the SCE Calcite Facilities.

Applicant Proposed Measures. SCE has defined the following five Applicant Proposed Measures (APMs) for protection of biological resources during construction of the substation facilities (see Section 2.6, *Project Description*, for full text):

- BIO-GEN-1: Pre-construction biological clearance surveys and monitoring
- ENV-GEN-1 WEAP: Worker's Environmental Awareness Training Program
- BIO-AVI-1: Avian-Safe Design
- BIO-HERP-1: Desert Tortoise
- BIO-MAM-1: Mohave Ground Squirrel

The first four measures include similar protective requirements as those in the mitigation measures developed for the Stagecoach Solar Generation Plant. Because certain components of the Stagecoach Facilities' mitigation measures are more protective than the APMs, the mitigation measures identified in this section supersede the APMs presented by SCE.

With respect to APM BIO-MAM1 (Mohave Ground Squirrel), as discussed in Impact BIO-3 for the solar generation plant, this species is not known to be present in the Proposed Project area or vicinity. None were observed during 2017 surveys of the SCE Calcite Facilities area, known occurrences from trapping are 20 miles away, the Proposed Project area is over 8 miles from the MGS geographic range, and MGS occurrences are lacking in the vicinity since 1955. Therefore, this EIR does not present mitigation for Mohave ground squirrel, but it does not prevent SCE from implementing this measure independently.

Impact BIO-1: Substantially reduce habitat for a fish or wildlife species.

Impacts would be minimized through multiple mitigation measures and offset through permanent compensation lands. **(Less than Significant with Mitigation)**

Impact Discussion

The discussion of Impact BIO-1 in Section 4.3.4.1 applies also to the proposed SCE Calcite Facilities, but the acreage of impact to vegetation would be smaller (111 acres; see Table 4.3-1). Construction of the SCE Calcite Substation would result in loss of all vegetation and habitat within the construction footprint. Mitigation measures would identify sensitive resources in the Proposed Project area and prevent disturbance of vegetation outside approved boundaries. Direct permanent and temporary impacts would be compensated for and offset with revegetation and acquisition of compensation lands. Indirect impacts to vegetation from weed infestation would be minimized with an IWMP.

The scale of O&M impacts to habitat would be less than construction impacts because O&M and decommissioning activities would mostly occur in areas previously disturbed by construction.

Impact Conclusion. While construction of the proposed SCE Calcite Facilities would result in a permanent net loss of desert shrubland habitat on the Proposed Project site, impacts would be minimal and localized in on the substation parcel. Natural open space,

including BLM ACECs, surrounds the Proposed Project site (see Impact BIO-1 under Section 4.3.4.1). Critical habitat is not located within the Proposed Project area.

Impacts would be minimized with MM BIO-1a through BIO-1f, as well as MM HAZ-1, and offset with the mitigation requirement for acquisition of compensatory mitigation lands (MM BIO-1g). The habitat loss of 111 acres (see Table 4.3-1) would be offset by the permanent preservation and management of comparable habitat at a ratio of 1:1, which would be permanently protected through funding by the Applicant. In the context of extensive public open space throughout the region and with implementation of the recommended mitigation measures, Impact BIO-1 would be less than significant and habitat for fish and wildlife species would not be substantially reduced during construction, O&M, and decommissioning of the SCE Calcite Facilities. In the context of extensive public open space throughout the region, and with implementation of the recommended mitigation measures, Impact BIO-1 would be less than significant and habitat for fish and wildlife species would not be substantially reduced during construction, O&M, and decommissioning of the SCE Calcite Facilities.

Mitigation Measures

APMs BIO-GEN-1 (Pre-construction biological clearance surveys and monitoring) and ENV-GEN-1 (WEAP: Worker's Environmental Awareness Training Program) were proposed by SCE to minimize impacts to habitat. However, components of the Stagecoach mitigation measures are more protective than the APMs. For example, MM BIO-1a requires specific clearance surveys and monitoring, and MM BIO-1b defines WEAP training requirements in detail. As a result, these mitigation measures supersede the APMs.

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM HAZ-1: Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-2: Substantially affect state or federally listed threatened or endangered plants, California Rare Plant Rank 1 or 2 plants, or locally significant populations of other non-listed special-status plants by causing take of a listed species or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species.

Impacts to special-status species would be reduced through salvage and offset through habitat preservation. **(Less than Significant with Mitigation)**

Impact Discussion

The types of potential direct and indirect impacts to special-status plants from construction, O&M, and decommissioning are described in detail under Impact BIO-2 in Section 4.3.4.1. No federally or State listed plant species have potential to occur at the SCE Calcite Facilities site, and no Joshua trees are present. The Calcite rare plant survey report (BRC 2016c) concluded that white pygmy-poppy, Clokey's cryptantha, purple-nerve cymopterus, and Parish's popcornflower could occur "within suitable habitat" at the proposed SCE Calcite Facilities site, but there is no suitable habitat for these four species, and they are not expected to occur.

Mojave monkeyflower (CRPR 1B.2) was not located during the field surveys. However, habitat appears suitable and there is a moderate probability it could be present in a season of different rainfall or temperature patterns (see Appendix F and Section 4.3.1). Even if individuals are present and directly impacted substantial impacts to the population would not occur.

Four individual plants of Beaver Indian breadroot (CRPR 1B.2) were observed during 2017 surveys of the SCE Calcite Facilities area. Twenty individuals were observed within 100 feet of the survey area along the proposed telecommunications line. Site preparation for construction at the proposed substation site could remove Beaver Indian breadroot plants (Figure 4.3-3b, Special-status Plants). Although some impact areas may only be temporarily disturbed, the Beaver Indian breadroot, if present, would be permanently removed from those areas during site preparation. Neither Beaver Indian breadroot nor other special-status plants are expected to re-colonize temporarily disturbed areas, except with active restoration efforts (e.g., salvage, as specified in MM BIO-1e), due to substantial alterations to soil conditions and seed banks. No other potentially significant impacts to special-status plants are expected.

Direct and indirect impacts to special-status plants from construction of the proposed substation would be minimized, avoided, or offset with implementation of MMs BIO-1a through BIO-1g as described for Impact BIO-1 in Section 4.3.4.1. MM BIO-1f requires specific mitigation for potential loss of Beaver Indian breadroot through avoidance, compensation, salvage and relocation, or experimental salvage and propagation of individual plants.

O&M and decommissioning activities would occur in previously disturbed areas where special-status plants are no longer present, and no direct impacts to special-status plants are anticipated. Potential indirect impacts to special-status plants from O&M and decommissioning could include dust, erosion, or invasive weeds, as described in under Impact BIO-1 in Section 4.3.4.1.

Impact Conclusion. With implementation of the recommended mitigation measures, net impacts to special-status plants would not be substantial and would be less than significant for construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

Impact BIO-3: Substantially affect state fully protected wildlife species, state or federally listed threatened or endangered wildlife, California Species of Special Concern, or state ranked S1, S2, or S3 special-status wildlife by causing take or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species or cause the local population to drop below self-sustaining levels.

Construction and operation of the proposed substation would result in loss of habitat for special-status wildlife, including desert tortoise. Impacts would be mitigated through a series of avoidance and protection measures and offset by habitat preservation. **(Less than Significant with Mitigation)**

Impact Discussion

Potential substation construction, O&M, and decommissioning impacts to special-status reptiles, birds, and mammals would be similar to those described for the proposed solar generation plant under Impact BIO-1 in Section 4.3.4.1. The federally and State listed desert tortoise was not observed, but sign was present in the SCE Calcite Substation area.

Construction could result in removal of habitat and burrows and may result in tortoise injury or mortality due to increased vehicular traffic and opportunistic predators.

As described in Impact BIO-3 for the solar generation plant in Section 4.3.4.1, while suitable habitat is present for MGS, they are not expected to occur based on distance to known trapping occurrences, MGS geographic range, and lack of occurrences in the vicinity since 1955. None were observed during protocol surveys of the nearby SCE Calcite Facilities in 2017. No impact to Mohave ground squirrel is expected.

Impact Conclusion. While 111 acres of wildlife habitat would be impacted, compensatory habitat would be permanently protected at a ratio of 1:1. No critical habitat is located on the Proposed Project site. Special-status wildlife occupying the Proposed Project site would be surveyed and identified, monitored, protected, and relocated in the Proposed Project vicinity. Wildlife populations would not be substantially impacted or caused to fall below self-sustaining levels. With implementation of the recommended mitigation measures listed below, Impact BIO-3 would be less than significant for construction, O&M, and decommissioning of the proposed SCE Calcite Facilities.

Mitigation Measures

SCE proposed APMs BIO-AVI-1 (Avian-Safe Design) and BIO-HERP-1 (Desert Tortoise) to minimize impacts to common and special-status birds and desert tortoise. Because certain components of the recommended mitigation measures are more protective, MM BIO-3g and BIO-3c supersede these APMs.

As described in Section 4.3.4, *SCE Calcite Facilities*, *Applicant Proposed Measures*, no impact to Mohave ground squirrel is expected. Regardless, SCE proposes to implement APM BIO-MAM1 to protect the special-status species.

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3b: Relocate Special-status Wildlife Species

MM BIO-3c: Protect Desert Tortoise

MM BIO-3d: Protect Desert Kit Fox and American Badger

MM BIO-3e: Avoid Effects on Burrowing Owl

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

MM NOI-1a: Minimize Noise During Construction. (Section 4.12, *Noise and Vibration*)

MM ALG-5: Minimize Night Lighting at Project Facilities. (Section 4.1, *Aesthetics/Light and Glare*)

MM TRA-1: Construction Traffic Control Plan. (Section 4.17, *Traffic and Transportation*)

Impact BIO-4: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance, which could cause nest abandonment.

Impacts of the proposed substation to nesting birds would be mitigated through a series of avoidance and protection measures and offset by habitat preservation. **(Less than Significant with Mitigation)**

Impact Discussion

The discussion of Impact BIO-4 in Section 4.3.4.1 applies to the proposed SCE Calcite Facilities. Construction, O&M, or decommissioning activities could cause disruption of nesting, including direct impacts such as loss of active nests, nest abandonment, or take of eggs or nestling birds.

Impact Conclusion. Recommended mitigation measures would result in either avoidance of vegetation clearing during the nesting season, or the conduct pre-construction nest surveys of potential habitat and implementation of non-disturbance buffer areas around active nests. Nests built on Proposed Project facilities or in nearby habitat would be monitored and avoided within a nest buffer. Proposed Project construction, O&M, and decommissioning is not expected to result in take or nest abandonment. With implementation of recommended mitigation measures, Impact BIO-4 would be less than significant.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3b: Relocate Special-status Wildlife Species

MM BIO-3e: Avoid Effects on Burrowing Owl

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-5: Create a substantial collision and electrocution risk for birds or bats.

Potential electrocution risks at the proposed substation would be minimized APLIC design standards. Potential collision hazard would be relatively small, so that fatality monitoring and adaptive management would be unneeded. **(Less than Significant with Mitigation)**

Impact Discussion

The proposed SCE Calcite Facilities would be installed just about 1,200 feet north of the SCE Pisgah-Lugo transmission corridor, which has three parallel high voltage transmission lines. In addition, the SCE Calcite area is about 1,500 feet west of existing SCE electric distribution lines that serve the Lucerne Valley community. As a result, construction of the substation and its overhead lines would not create a new potential for collision but would add to an existing risk.

The general explanation of Impact BIO-5 for the proposed solar generation plant in Section 4.3.4.1 applies to the proposed SCE Calcite Substation, except that the substation is in a more developed setting and it would be much smaller. The new overhead transmission lines and other electrical hardware at the substation, if insufficiently spaced, could present an electrocution risk to birds. The SCE Calcite Facilities would not present a potential “lake effect” hazard for birds.

Impact Conclusion. Recommended mitigation would require that SCE implement industry standard protective designs for the SCE Calcite Facilities to deter birds from approaching.

Monitoring bird mortality and adaptively managing Proposed Project facilities would be implemented to evaluate and minimize collisions. While bird fatalities may still occur due to collisions with Proposed Project facilities and equipment, the risk of substantial effects to avian populations is minimal if appropriate mitigation is implemented, and Impact BIO-5 would be less than significant for the SCE Calcite Facilities.

Mitigation Measures

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

Impact BIO-6: Remove or degrade substantial acreage of riparian vegetation or sensitive vegetation communities identified as S1, S2, or S3, such that the community could be eliminated or its structure or function in the vicinity of the project would be substantially affected.

No riparian vegetation or sensitive communities occur in the SCE Calcite Facilities area. **(No impact)**

Impact Discussion

No Joshua tree woodland or other sensitive communities or riparian vegetation occur in the SCE Calcite Facilities area.

Mitigation Measures

No mitigation would be required.

Impact BIO-7: Substantially impact jurisdictional wetlands or waters of the U.S. or waters of the State such that ecological structure or function of jurisdictional features in the vicinity of the project would be substantially affected.

The proposed substation would impact State-jurisdictional features; the impact would be minimized through on-site measures and offset through off-site compensation. **(Less than Significant with Mitigation)**

Impact Discussion

Within the SCE Calcite Substation area, 12 features were delineated within the impact footprint as non-wetland waters probably subject to the jurisdiction of the RWQCB and potential streambeds subject to the jurisdiction of the CDFW. As discussed for the solar generation plant, in Section 4.3.4.1, these washes are not federally jurisdictional due to the Lucerne Dry Lake closed drainage basin without surface water connection to interstate waters or navigable waters. No wetlands are present.

The discussion of Impact BIO-7 for the proposed solar generation plant in Section 4.3.4.1 applies to the proposed SCE Calcite Substation. Proposed Project construction, O&M, and decommissioning activities would directly and indirectly impact jurisdictional waters along ephemeral and sparsely vegetated washes.

Impact Conclusion. No wetlands or Waters of the U.S. are located in the Proposed Project area. The Proposed Project area includes State-jurisdictional ephemeral washes that would be protected with pollutant and debris MMs. While approximately 0.7 acres of jurisdictional waters would be impacted, with implementation of recommended mitigation measures and off-site habitat compensation. Impact BIO-7 would be less than significant and jurisdictional waters would not be substantially impacted.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-7a: Protect Streambeds and Watersheds

MM HAZ-1: Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)

Impact BIO-8:	**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.**
Due to its small size and extensive surrounding open space, the proposed substation would create minimal interference with wildlife movement. **(Less than Significant)**	

Impact Discussion

The discussion of Impact BIO-8 for the proposed solar generation plant in Section 4.3.4.1 describes the regional concern related to wildlife movement. With respect to the proposed SCE Calcite Substation, its much smaller size and location farther south would present

only minimal interference with wildlife movement through the area. No wildlife populations would be cut off from surrounding habitat. Access to nursery sites (i.e., dens, burrows, or nests) within or beyond the fenced area would be minimally impeded. Fencing during construction, O&M, and decommissioning would prevent ground-dwelling wildlife from entering the site or moving across it.

Impact Conclusion. Construction of the proposed SCE Calcite Facilities would result in a permanent net loss of desert shrubland habitat that supports wildlife movement and permanent fencing around the solar generation plant would impede movement. However, the substation site is relatively small and surrounded by natural open space including adjacent BLM ACECs. The surrounding ACECs are managed to protect wildlife habitat and regional habitat linkages. Due to its size, the substation would not substantially interfere with wildlife movement. The impact would be less than significant, and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Impact BIO-9: Conflict with local policies or ordinances protecting biological resources.

Potential impacts to County-protected resources would be reduced with implementation of recommended mitigation measures. **(Less than Significant with Mitigation)**

Impact Discussion

The SCE Calcite Facilities would be owned and operated by SCE and permitted by the CPUC. While the CPUC approval supersedes requirements of local policies, the CPUC does consider local policies in its decisions. County policies outline goals for preservation of biological resources and important habitat, protection and conservation of specified desert plants, coordination with state and federal agencies to preserve rare and endangered species, and future use, development, and recreation in County communities. The Development Code (Chapter 88.01.030) protects Joshua trees on private lands, but there are no Joshua trees on the SCE Calcite Facilities lands.

Impact Conclusion. All potentially significant impacts to biological resources in the Proposed Project area, including the resources identified and protected in the County General Plan, have been identified and would be minimized with mitigation measures as described in Impact BIO-1 through Impact BIO-8 (Section 4.3.4.1). With these measures, Impact BIO-9 would be less than significant for construction, O&M, and decommissioning.

Mitigation Measures

MM BIO-1a: Implement Biological Monitoring

MM BIO-1b: Implement Worker Environmental Awareness Training

MM BIO-1c: Minimize Impact and Protect Identified Vegetation and Habitat

MM BIO-1d: Weed Management

MM BIO-1e: Revegetation

MM BIO-1f: Protect Important Plants

MM BIO-1g: Compensate for Loss of Natural Habitat

MM BIO-3a: Protect Wildlife Resources

MM BIO-3c: Protect Desert Tortoise

MM BIO-3f: Bird and Bat Protection

MM BIO-3g: Implement Protective Designs for Collector Lines and Gen-tie Lines

MM BIO-7a: Protect Streambeds and Watersheds

Impact BIO-10: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

There are no adopted NCCPs or HCPs that overlap the proposed SCE Calcite Facilities boundaries. **(No Impact)**

Impact Discussion

The proposed SCE Calcite Facilities site is not located within the boundaries of an adopted HCP; NCCP; or other approved local, regional, or State habitat conservation plan. Additionally, as shown in Figure 4.3-7, Apple Valley MSHCP/NCCP, the substation would not be within the proposed Apple Valley MSHCP/NCCP boundary. There is no potential conflict and no impact.

Mitigation Measures

None required.

4.3.5 Cumulative Impacts

The Cumulative Scenario is described in Section 3.0. As the number of solar projects and other types of development increase in the region, the cumulative impacts to biological resources, such as habitat loss also increase. This analysis considers the current and foreseeable future projects identified in Table 3-1 (Cumulative Projects within 10 miles of

the Proposed Stagecoach Solar Project), Table 3-2 (Proposed Solar Projects More Than 10 Miles from the Proposed Stagecoach Solar Project), and Table 3-3 (Existing Solar Development in San Bernardino County). This analysis presumes that mitigation measures, identified in Section 4.3.4.1 through 4.3.4.3, to mitigate the Proposed Project's impacts to biological resources, would be implemented.

Cumulative effects for biological resources apply to both plant and wildlife species and must consider distribution, habitat availability, designated critical habitat, local rarity or commonness, and likely responses to Proposed Project's effects for each species.

From a timing perspective, the Proposed Project could contribute to cumulative effects to Biological Resources starting with the initiation of on-site activities and continuing throughout the O&M phase, through final decommissioning.

4.3.5.1 Geographic Scope

For most biological resources, the geographic extent for this cumulative analysis includes all projects identified in the Cumulative Scenario, Tables 3-1 (Cumulative Projects Within 10 Miles) and 3-2 (Proposed Solar Projects More Than 10 Miles from the Proposed Stagecoach Solar Project) and shown on Figure 3-1 (Cumulative Projects). This area encompasses the Lucerne Valley and the Mojave Desert of San Bernardino County because it consists of similar habitat and encompasses the home ranges of species such as those that would be directly or indirectly be affected by the Proposed Project. For cumulative impacts to wildlife movement, the geographic extent of the cumulative analysis addresses only those projects listed in Table 3-1 (Cumulative Projects within 10 Miles) because more distant projects would not affect local wildlife populations and habitat connectivity.

Existing and probable foreseeable future actions of most concern for biological resources in the Lucerne Valley area are listed below and in Table 3-1, and mapped in Figure 3-1 in Section 3.0:

(1) Sienna Solar North, South, East, and West

(2) Ord Mountain Solar LLC

(3) Calcite Solar I – Lendlease Energy Development, LLC

(4) SCE Eldorado Lugo Mohave Capacitor Project (proposed)

(5) SCE Pisgah-Lugo Transmission Corridor (existing)

These five energy related projects are all in the same general habitat types as the Proposed Project and are expected to have the potential to contribute to cumulative loss of habitat or effects on protected fish and wildlife species.

4.3.5.2 Cumulative Impact Analysis

Impact BIO-1: Substantially Reduce Habitat for a Fish or Wildlife Species

Construction-related impacts of the cumulative projects would temporarily increase noise and activities, dust, and other habitat disturbances throughout the region. On completion of construction, longer-term land use conversion would contribute to reduced habitat availability and increased habitat fragmentation. In the context of the number of past, present, and future projects many of which are large solar projects, the effects of the Proposed Project would contribute incrementally to the cumulative significant impacts to vegetation and habitat.

The loss of natural habitats that would result from the Proposed Project would be offset by protecting compensation lands off-site. Conservation areas surrounding the Proposed Project area would continue to be protected through the DRECP LUPA, where ACECs and California Desert National Conservation Lands are protected as part of the overall goal to "advance federal and State natural resource conservation goals" (BLM 2016a). Creosote bush scrub, a widespread and common habitat type, would be offset at a 1:1 ratio, while Joshua tree woodland, a sensitive community, would be offset at a 1:1.5 ratio. By implementing these compensation ratios, the residual net loss of native habitat resulting from the Proposed Project would not contribute substantially to a cumulatively considerable effect on vegetation and habitat.

Impact BIO-2: Substantially Affect State or Federally Listed Plants or Their Habitat

The Proposed Project would affect a number of special-status plants, as identified in Section 4.3.4. One State candidate for listing, Joshua tree, would be impacted in the solar generation plant. The past, present, and future cumulative projects would have similar or greater impacts to special-status plants, which would result in a cumulatively significant impact to regional special-status plants. The contribution of the Proposed Project would not be considerable due to implementation of mitigation for impacts to vegetation, identified in Impact BIO-1, and for impacts to Joshua tree, identified in Impact BIO-2. Mitigation measures would reduce the impacts so that residual effects would be minimal. Due to the habitat compensation proposed, the residual net loss of special status plants and their habitat resulting from the Proposed Project would not contribute substantially to a cumulatively considerable effect on vegetation and habitat.

Joshua Tree Woodland Habitat. The Proposed Project would result in the loss of Joshua tree woodland habitat. Many of the cumulative projects would have qualitatively similar impacts to sensitive habitat, resulting in a potentially significant cumulative impact. The effects of the Proposed Project would contribute incrementally to the cumulative impacts to sensitive habitat, but this incremental contribution would not be considerable because the Proposed Project would minimize, rectify, or offset impacts to sensitive habitat by mitigation measures identified under Impact BIO-5 and Impact-BIO-6. These measures would mitigate

the impacts so that residual effects would be minimal and the net loss of sensitive habitat would not be cumulatively considerable.

Impact BIO-3: Substantially Affect Protected Wildlife Species

Desert Tortoise. Suitable and/or occupied habitat is present throughout the Proposed Project area. Many of the past, present, and foreseeable future projects in the vicinity would impact desert tortoise habitat and many of them could directly affect desert tortoises, due to the number and size of the cumulative projects. In combination with the Proposed Project, the other cumulative projects have the potential to result in a cumulatively significant impact. Mitigation measures identified in this EIR would prevent lethal take of desert tortoise and offset impacts to its habitat. These measures would reduce the severity of impacts so that residual effects to desert tortoise would be minimal. The incremental contribution of the Proposed Project to the cumulative impacts to desert tortoise would not be considerable because no lethal take would occur and habitat loss would be offset.

Burrowing Owl. Potential impacts of the Proposed Project to burrowing owl include habitat loss or degradation, possible injury or mortality if they are present in a work area, particularly during nesting season, and possible mortality from collision with facilities, as described for native birds. Other projects in the vicinity include several transmission lines and solar energy projects with similar habitat for burrowing owl. Effects of the other projects would be similar to the potential effects of the Proposed Project. Together, these projects would result in significant impact to habitat loss and mortality to burrowing owls. The incremental contribution of the Proposed Project to the cumulative impacts to burrowing owls, including habitat loss, construction-related mortality, or collision morality, would not be considerable because mitigation measures would be implemented for all projects as required by the CDFW. In addition, native habitat loss would be offset, no take would occur during construction, and potential collision would be mitigated as described for native birds. With this mitigation, the Proposed Project's contribution to the net loss of habitat would not be considerable.

Desert Kit Fox and American Badger. Active desert kit fox burrows and potential American badger burrows occur on the Proposed Project site. Both species occupy native habitats, wherever prey animals may be present. Both species are expected to occur also on the cumulative project sites, so loss of the habitat and prey species could result in a significant cumulative impact. However, mitigation measures identified under Impact BIO-1 would offset habitat loss for both species. Similarly, mitigation measures identified in Impact BIO-3 would prevent or minimize wildlife injury and mortality and require pre-construction surveys to exclude both species from work sites. As a result, the incremental contribution of the Proposed Project to the cumulative impacts to these species would not be considerable because no take would occur, and native habitat loss would be offset.

Raptors, Including Golden Eagles. No special-status raptors (except burrowing owl) are expected to nest on the Proposed Project site. However, the Project lands provide suitable

seasonal or year-round foraging habitat for several raptors, described in Section 4.3.4 under Impact BIO-3, and the Project lands are within potential foraging distance of golden eagle nesting territories (within one mile of the Proposed Project site in the surrounding mountains). Several raptors are likely to forage infrequently on the Proposed Project lands throughout the year, including winter and migration seasons. Effects of the cumulative projects would be similar to effects of the Proposed Project. Cumulatively, these projects could result in a potential significant impact due to habitat loss. The incremental contribution of the Proposed Project to the cumulative effects on special-status raptors would not be considerable because habitat loss would be offset, and potential collision would be mitigated as described for native birds.

Special-status Bats. The Proposed Project could adversely impact special-status bats through the elimination of foraging habitat or (for western mastiff bat) loss of roost sites in mountainous areas of the site. Impacts to roosting habitat could disturb, injure, or kill bats. Mitigation measures identified under Impact BIO-1 would minimize and offset habitat loss. Additional mitigation measures identified in Impact BIO-3 would require pre-construction surveys, inspection of structures, and removal of wildlife. These measures are expected to effectively minimize potential impacts to special-status bats, and to offset habitat loss. The cumulative projects would also eliminate desert shrubland foraging habitat and result in the loss of roost sites, creating the potential for a significant cumulative impact to special-status bats. However, each project would be required to implement measures similar to those identified for the Proposed Project, including offset of native habitats, avoidance of active roosts, and BBCS. The incremental contribution of the Proposed Project to the cumulative impacts to special-status bats, including habitat loss and collision morality, would not be considerable because native habitat loss would be offset, and potential collision would be mitigated.

Impacts BIO-4 and BIO-5: Cause Take of Protected Nesting Birds or Create Collision or Electrocution Risk for Birds or Bats

Migratory and nesting birds are expected to occur throughout the area during construction and O&M. Land use conversion for the Proposed Project and the cumulative projects would result in habitat loss and habitat degradation, displacement, decreased foraging activities, and potentially disruption or failure of nesting, increased predation, or mortality. Solar panels and the gen-tie line of the Proposed Project as well as other solar PV projects may cause collision hazards, such as a “lake effect” leading to bird mortality. Taken together with the other proposed solar projects, the projects have the potential to create a cumulatively significant impact for native birds.

The Proposed Project’s impacts would be mitigated to the extent feasible through pre-construction surveys, avoidance of active nests, O&M phase mortality monitoring, and mitigation applied through adaptive management, depending on monitoring results, as described in MM BIO-3f (Bird and Bat Protection). Habitat loss would be minimized and offset through mitigation measures identified under Impact BIO-1.

Regarding potential collision from the solar generation plant or gen-tie line or lake effect mortality, MM BIO-3f (Bird and Bat Protection), would require monitoring of bird kills and implementation of adaptive management. MM BIO-3g (Implement Protective Designs for Collector Lines and Gen-tie Lines) would require mechanisms to visually warn birds such as permanent markers or bird flight diverters and maintain sufficient distance between all conductors and grounded components to prevent electrocution. With implementation of these mitigation measures, the contribution to cumulative impacts to native bird populations from the proposed solar generation plant would be minimized.

As a result of proposed mitigation, the incremental contribution of the Proposed Project to the cumulative loss of native bird habitat, degradation of nesting success, and collision with Project facilities would not be considerable because no take would occur, and native habitat loss would be offset.

Impacts BIO-6 and BIO-7: Remove or Degrade Riparian Vegetation, or Substantially Affect Jurisdictional Wetlands or Waters of the U.S.

The Proposed Project would affect sparsely vegetated washes, which were identified as jurisdictional waters of the State. Many of the cumulative projects would have qualitatively similar impacts to jurisdictional waters due to the nature of the area and the large washes that cross the region, resulting in the potential for a significant cumulative impact. The effects of the Proposed Project would contribute incrementally to the cumulative impacts to jurisdictional waters of the State, but this incremental contribution would not be considerable because the Proposed Project would minimize, rectify, or offset impacts to sensitive habitat by mitigation measures identified under Impact BIO-6 and Impact-BIO-7. These measures would reduce the severity of impacts so that residual effects would be minimal.

Impact BIO-8: Wildlife Movement

Wildlife movement could be constrained by the Proposed Project and the other projects within 10 miles (see Table 3-1, Cumulative Projects Within 10 Miles). Three of these are large-scale solar energy projects (Sienna Solar, Ord Mountain Solar, and Calcite Solar) that would cumulatively affect up to 2,777 acres of private lands in the Lucerne Valley vicinity (Figure 3-1, Cumulative Projects). The Proposed Project's potential interruption to wildlife movement across the Lucerne Valley is minimized because it is surrounded by open space on public land that is managed by the BLM as ACECs that support wildlife habitat connectivity. These ACECs provide wildlife movement habitat that would not subject to potential future development. Mitigation measures identified in Section 4.3.4.1 under Impact BIO-7 (Wildlife Movement) would avoid or minimize adverse off-site effects of the Proposed Project to surrounding habitat, so that wildlife accessibility remains intact. Similarly, the cumulative impacts of other projects to wildlife movement are minimized by the habitat protection and unrestricted movement areas within the surrounding ACECs. Even with development of the cumulative projects, the incremental contribution of the Proposed Project to the cumulative effects on wildlife movement would not be

considerable because surrounding BLM-administered open space would be preserved as movement habitat through management of the ACECs.

4.3.6 Mitigation Measure Summary

Table 4.3-2 summarizes the mitigation measures identified in this EIR to reduce or avoid potentially significant impacts to biological resources. All mitigation measures apply to impacts for the Stagecoach Solar Generation Plant, the Stagecoach Gen-tie Line, and the SCE Calcite Facilities, unless otherwise noted.

Table 4.3-2. Impact and Mitigation Measure Summary

Impact	Mitigation Measures
Impact BIO-1: Substantially reduce habitat for a fish or wildlife species	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM HAZ-1:** Hazardous Material Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)
Impact BIO-2: Substantially affect state or federally listed threatened or endangered plants, California Rare Plant Rank 1 or 2 plants, or locally significant populations of other non-listed special-status plants by causing take of a listed species or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants – *[Does not apply to Stagecoach Gen-tie Line]* **MM BIO-1g:** Compensate for Loss of Natural Habitat

Table 4.3-2. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact BIO-3: Substantially affect state fully protected wildlife species, state or federally listed threatened or endangered wildlife, California Species of Special Concern, or state ranked S1, S2, or S3 special-status wildlife by causing take or degrading occupied habitat or designated critical habitat, or substantially reduce the number or restrict the range of a listed species or cause the local population to drop below self-sustaining levels	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants – *[Does not apply to Stagecoach Gen-tie Line]* **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM BIO-3a:** Protect Wildlife Resources **MM BIO-3b:** Relocate Special-status Wildlife Species **MM BIO-3c:** Protect Desert Tortoise **MM BIO-3d:** Protect Desert Kit Fox and American Badger **MM BIO-3e:** Avoid Effects on Burrowing Owl **MM BIO-3f:** Bird and Bat Protection **MM BIO-3g:** Implement Protective Designs for Collector Line and Gen-tie Lines **MM ALG-5:** Minimize Night Lighting at Project Facilities (Section 4.1, *Aesthetics/Light and Glare*) **MM NOI-1a:** Minimize Noise During Construction (Section 4.12, *Noise and Vibration*) **MM TRA-1:** Construction Traffic Control Plan (Section 4.17, *Traffic and Transportation*)

Table 4.3-2. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact BIO-4: Cause take of protected nesting birds, including nestlings or eggs, through direct impacts to the nest or substantial nearby disturbance, which could cause nest abandonment	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants – *[Does not apply to Stagecoach Gen-tie Line]* **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM BIO-3a:** Protect Wildlife Resources **MM BIO-3b:** Relocate Special-status Wildlife Species **MM BIO-3e:** Avoid Effects on Burrowing Owl **MM BIO-3f:** Bird and Bat Protection **MM BIO-3g:** Implement Protective Designs for Collector Line and Gen-tie Lines
Impact BIO-5: Create a substantial collision and electrocution risk for birds or bats	**MM BIO-3f:** Bird and Bat Protection **MM BIO-3g:** Implement Protective Designs for Collector Line and Gen-tie Lines
Impact BIO-6: Remove or degrade substantial acreage of riparian vegetation or sensitive vegetation communities identified as S1, S2, or S3, such that the community could be eliminated or its structure or function in the vicinity of the project would be substantially affected *[Mitigation measures for Impact BIO-6 are not applicable to the Stagecoach Gen-tie Line or SCE Calcite Facilities]*	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants **MM BIO-1g:** Compensate for Loss of Natural Habitat

Table 4.3-2. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact BIO-7: Substantially impact jurisdictional wetlands or waters of the U.S. or waters of the State such that ecological structure or function of jurisdictional features in the vicinity of the project would be substantially affected	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants – *[Does not apply to Stagecoach Gen-tie Line]* **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM BIO-7a:** Protect Streambeds and Watersheds **MM HAZ-1:** Hazardous Materials Training and Management Plan (Section 4.9, *Hazards and Hazardous Materials*)
Impact BIO-8: 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 *[Mitigation measures for Impact BIO-8 are not applicable to SCE Calcite Facilities]*	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants – *[Does not apply to Stagecoach Gen-tie Line]* **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM BIO-3a:** Protect Wildlife Resources **MM BIO-3c:** Protect Desert Tortoise **MM BIO-3f:** Bird and Bat Protection **MM BIO-3g:** Implement Protective Designs for Collector Line and Gen-tie Lines

Table 4.3-2. Impact and Mitigation Measure Summary	
Impact	**Mitigation Measures**
Impact BIO-9: Conflict with local policies or ordinances protecting biological resources	**MM BIO-1a:** Implement Biological Monitoring **MM BIO-1b:** Implement Worker Environmental Awareness Training **MM BIO-1c:** Minimize Impact and Protect Identified Vegetation and Habitat **MM BIO-1d:** Weed Management **MM BIO-1e:** Revegetation **MM BIO-1f:** Protect Important Plants **MM BIO-1g:** Compensate for Loss of Natural Habitat **MM BIO-3a:** Protect Wildlife Resources **MM BIO-3c:** Protect Desert Tortoise **MM BIO-3f:** Bird and Bat Protection **MM BIO-3g:** Implement Protective Designs for Collector Line and Gen-tie Lines **MM BIO-7a:** Protect Streambeds and Watersheds
Impact BIO-10: Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan	No mitigation required

4.4 CULTURAL RESOURCES

This section describes the archaeological qualities of the Proposed Project area, evaluates the type and significance of impacts that may occur as a result of the Proposed Project, and identifies measures to avoid or substantially lessen any impacts found to be potentially significant. In addition, existing laws and regulations relevant to cultural resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the Proposed Project.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system

4.4.1 Environmental Setting

4.4.1.1 Regional Setting of the Stagecoach Solar Generation Plant, Stagecoach Gen-tie Line, and SCE Calcite Facilities

The Stagecoach Facilities and the SCE Calcite Facilities would be located in the central portion of San Bernardino County, approximately 15 miles south of the City of Barstow and 12 miles northwest of the unincorporated community of Lucerne Valley. It would be located east of Interstate 15, south of Interstate 40, and about 1.5 miles west of State Route 247 (SR-247, or Barstow Road). Sidewinder Mountain is located to the south, Stoddard Ridge is located to the north, and both Goat Mountain and West Ord Mountain are located to the east.

The Project area is within the Mojave Desert ecological and geographic province. Minimal precipitation (8–18 centimeters), low humidity (10–40 percent), wide diurnal temperature ranges (up to 77 degrees Fahrenheit), high mean summer temperatures (77–102 degrees Fahrenheit), and strong seasonal winds characterize the modern climate in the Mojave Desert. Average annual precipitation is approximately 4.5 inches. Most months receive 0.4 to 0.5 inches of rainfall, although rainfall in May and June is very rare, and rainfall in August is above average. Please refer to Appendix G (Phase I Cultural Resource Assessment for the Stagecoach Solar Project, Northern Lucerne Valley, San Bernardino County, California) for a detailed description of the geography, hydrology, fauna, flora, and paleoenvironments for the Proposed Project area.

The SCE Calcite Facilities footprint is located near the former northern shoreline of Pleistocene Lake Lucerne, which is an area of low dunes and shifting sands that exhibit occasional deflation of surfaces.

4.4.1.2 Definition of Cultural Resources

Cultural resources are the tangible or intangible remains or traces left by prehistoric or historic peoples who inhabited California. (Society for California Archaeology 2020). Cultural resources can be separated into three categories: archaeological, built environment, and tribal cultural resources.

Archaeological resources include both historic era and prehistoric remains of past human activity. **Historic era resources** can consist of structural remnants (such as cement foundations), historic era objects (such as bottles and cans), and sites (such as refuse deposits or scatters). Prehistoric resources can include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps/rock rings, ceremonial sites, and trails.

Built environment resources consist of standing historic era buildings and structures, the latter of which includes canals, roads and trails, bridges, ditches, and cemeteries.

A **Tribal cultural resource** can include Native American sacred sites (such as rock art sites) and traditional resources that are important for maintaining the cultural traditions of any group. See Section 4.5 for discussion of Tribal cultural resources.

Pursuant to State California Environmental Quality Act (CEQA) Guidelines, section 15064.5, **historical resource** is a term used to define a prehistoric or historic aged resource that is recommended eligible, determined eligible, or listed on the California Register of Historic Resources (CRHR).

4.4.1.3 Cultural Resources Study Area

The study area for direct effects to cultural resources is defined as all areas that would be subject to ground disturbing activity associated with development of the Proposed Project,

which include the Stagecoach Solar Generation Plant, Stagecoach Gen-tie Line, and the SCE Calcite Facilities.

Indirect effects may occur as a result of the visibility of the Proposed Project, which may change the visual setting of the Proposed Project area. The indirect effects area includes a 1-mile radius around all components of the Proposed Project.

4.4.1.4 Prehistoric Background

Prehistoric archaeological sites in California are places where Native Americans lived or carried out activities during the prehistoric period before Europeans arrived in 1769 A.D. These sites contain artifacts and subsistence remains, and they may contain human burials. Artifacts are objects made by people and include tools (such as projectile points, scrapers, and grinding implements), waste products from making stone tools (flakes and debitage), and nonutilitarian or decorative artifacts (beads, ornaments, ceremonial items, and rock art). Subsistence remains include the inedible portions of foods, such as animal bone and shell, and edible parts that were lost and not consumed, such as charred seeds.

Southern California's desert region has a long history of human occupation. Prehistoric material culture within this region has been organized according to periods or patterns that define technological, social, economic, and ideological elements. Within these periods, archaeologists have defined a chronology specific to the prehistory of the desert region, including the Proposed Project area.

Recently, Sutton and others proposed a cultural-ecological chronological framework based on climatic periods (e.g., Early Holocene) "to specify spans of calendric time and cultural complexes (e.g., Lake Mojave Complex) to denote specific archaeological manifestations that existed during (and across) those periods." The Mojave Desert region is divided into four major periods; Paleoindian Period, Lake Mojave Period, Pinto Period, and the Late Holocene which includes the Gypsum, Rose Springs, and Late Prehistoric complexes. Please refer to Appendix G for detailed description of each major periods.

4.4.1.5 Ethnographic Background

The southern California desert region has a long history of human occupation. In the Lucerne Valley, where the proposed Project facilities are located, and surrounding areas, Native people have lived and practiced their culture for over 11,500 years. In the more recent historical time period, the Proposed Project area is described as the territory of the Desert Serrano (or Vanyume) people. Pertinent aspects of this overview, along with ethnographic information obtained primarily from EIR Appendix G (Phase I Cultural Resource Assessment for the Stagecoach Solar Project, December 2020) are presented below.

Serrano

The Serrano, or “mountaineers” in Spanish, occupied the territory of the San Bernardino Mountains east to Mount San Gorgonio, the San Gabriel Mountains west to Mount San Antonio, and portions of the desert to the north and the fringe of the San Bernardino Valley to the south. Numbering no more than perhaps 1,500 people, the Serrano were scattered over a rugged, expansive landscape. The Serrano were Shoshonean peoples, speakers of languages in the Takic sub-family of the larger Uto-Aztecan language family. Their most intensive cultural contacts were with the Pass Cahuilla, who occupied the territory to the southeast, and the Gabrielino, who occupied the lands westward to the Pacific coast (Appendix G).

The term “Serrano” is properly applied to just one of four original Serrano subgroups, the others being the Alliklik, Vanyume, and Kitanemuk; all were closely linked linguistically, but were not a tribe with a recognizable political unity. The Serrano subgroup occupied the portion of the San Bernardino Mountains and adjacent valleys that encompass the Proposed Project area, and thus this term refers here to the smaller cultural unit.

Serrano clans were politically autonomous, although linked by ceremonial ties to other clans and peoples of other tribal groupings (i.e., the Cahuilla and Gabrielino). A moiety structure conditioned Serrano social life, all clans belonging to either the Coyote or Wildcat moiety, and all spring ceremonial and mourning obligations extending to at least one other clan. Exchanges of shell money between clans occurred during ceremonies, and contributions of shell money were made to mourning clan leaders by members of other clans on occasions of death. These moieties were exogamous, while clan organization was both patrilineal and exogamous (Appendix G). Please refer to Appendix G for more detail on the Serrano.

4.4.1.6 Historic Era Background

Detailed historical research was conducted and a comprehensive Historical Context Statement (provides the framework for evaluating a property for historic significance and integrity) was developed as part of Appendix G. The Historical Context Statement includes the Proposed Project area, and a greater Lucerne Valley region that includes Big Bear and Holcomb Valley on the south, Barstow on the north, Victorville on the west, and Old Woman Springs to the east.

The larger geographic region has a complex history extending back to the mid-1850s represented by a variety of built environment features that include ranches and homesteads, single family homes, residential tracts, barns and sheds, and commercial properties. Significant historic architectural styles represented include Pioneer, Craftsman, and Adobe. Much of the architecture represented throughout Lucerne Valley is, however, of a much more prosaic nature that includes the vernacular and builder/contractor architectural styles. Linear features of interest that are found across the Lucerne Valley region include

wagon roads, railroads, high-voltage transmission lines, powerlines, pipelines, telephone lines, freeways and highways, county roads, local roads, and various flood control channels. Interesting historic features identified within the much smaller Proposed Project area include early springs, homesteads and ranches, mines and mining roads, historic County roads and State highways, WW-II bombing ranges, and various transmission lines and pipelines. Please refer to Appendix G for the complete Historical Context Statement.

4.4.1.7 Cultural Resources Data Collection Methodology

Stagecoach Solar Generation Plant

Applied EarthWorks, Inc. (Æ) conducted a cultural resources literature review and records search at the South Central Coastal Information Center (SCCIC), housed at California State University, Fullerton, and a historical map review. This search was limited to resources and reports within a 1-mile radius of the Proposed Project. The literature review and records search materials contained information on any prehistoric or historic era cultural resources previously recorded within the Proposed Project and 1-mile radius. Additional sources consulted during the cultural resource literature review and records search include the Office of Historic Preservation Archaeological Determinations of Eligibility and the Office of Historic Preservation Directory of Properties in the Historic Property Data File (Thomas 2017 [Confidential]).

Intensive pedestrian field surveys were conducted in order to verify the location of any previously identified cultural resource and to inspect previously unsurveyed lands within the Proposed Project. Field surveys are useful for identifying aboveground or surface cultural resources and for identifying high-probability areas. However, negative pedestrian survey results do not preclude the possibility that buried archaeological deposits could be discovered.

Two separate survey efforts were completed for the solar generation plant. Æ conducted pedestrian field surveys in July and October 2017 (Tennyson 2017 [Confidential]). A supplemental intensive pedestrian field survey was completed in May 2020 by Aspen Environmental Group (Aspen), which included an expanded solar/storage area in the southern portion of the solar generation plant. As stated above, field surveys were conducted in order to verify the location of any previously identified cultural resources and to inspect previously unsurveyed lands for resources within the Proposed Project (Appendix G).

Stagecoach Gen-tie Line

Aspen conducted a cultural resources literature review and records search at the South Central Coastal Information Center (SCCIC), housed at California State University, Fullerton, and a historical map review. This search was limited to resources and reports within a 1-mile radius of the Proposed Project. The literature review and records search

materials contained information on any prehistoric or historic era cultural resources previously recorded within the Proposed Project and 1-mile radius. Additional sources consulted during the cultural resource literature review and records search included the Office of Historic Preservation Archaeological Determinations of Eligibility and the Office of Historic Preservation Directory of Properties in the Historic Property Data File (Appendix G).

Intensive pedestrian field surveys were conducted in order to verify the location of any previously identified cultural resource and to inspect previously unsurveyed lands for resources within the Proposed Project. Field surveys are used for identifying aboveground or surface cultural resources and for identifying high-probability areas. Aspen conducted intensive pedestrian field surveys of the gen-tie right-of-way in May of 2020 (Appendix G).

SCE Calcite Facilities

ICF International (ICF) conducted the initial cultural resources literature review and records search for the SCE Calcite Facilities in 2016 under contract with Southern California Edison (SCE) and Dudek provided a summary of previous work in 2016. A supplemental record search was conducted by Aspen in 2020. Both record searches were conducted at the SCCIC, housed at California State University, Fullerton, and a historical map review was also completed. This search was limited to resources and reports within a 1-mile radius of the Proposed Project. The literature review and records search materials contained information on any prehistoric or historic era cultural resource previously recorded within the Proposed Project and 1-mile radius. Additional sources consulted during the cultural resource literature review and records search include the Office of Historic Preservation Archaeological Determinations of Eligibility and the Office of Historic Preservation Directory of Properties in the Historic Property Data File (ICF 2016; Aspen 2020b).

In 2016, both ICF and Dudek surveyed the SCE Calcite Facilities, and in 2020, Aspen surveyed a portion of the SCE Calcite Facilities that was associated with the Stagecoach Gen-tie Line. These intensive pedestrian field surveys were conducted in order to verify the location of any previously identified cultural resources and to inspect previously unsurveyed lands within the Proposed Project. Field surveys are used to identify aboveground or surface cultural resources and for identifying high-probability areas.

4.4.1.8 Cultural Resources Findings Summary

Findings Summary for Stagecoach Solar Generation Plant

The literature review and records search indicated that four previous studies had been conducted in the record search area (Proposed Project and 1-mile buffer). One site (Lucerne Valley Cutoff) and two isolated finds (P-36-027423 and P-36-027430) had been previously recorded in the solar generation area.

The combined surveys identified a total of 37 cultural resources within the Stagecoach Solar Generation Plant portion of the Proposed Project (Table 4.4-1). Of these 37 resources, 21 of them are sites (defined as the location of a prehistoric or historic era occupation or activity) and the other 16 are isolated resources. Three of the sites are prehistoric and include the minimum of artifacts or features necessary to qualify as sites. The other 18 sites are from the historic era and provide information related to local historic contexts, particularly transportation, government activity, and U.S. military operations.

Table 4.4-1. Cultural Resource Sites Recorded within the Stagecoach Solar Generation Plant

Temporary Field No.	Brief Description
3380-15	Prehistoric Trail
3380-16	Can scatter/car camp
3380-17	50s-60s fire ring/campfire
3380-18	General Land Office (GLO) marker. ¼ marker for S7/S18 T6N R1W, dated 1917
3380-19	Historic campfire
3380-20	Road
3380-21	15 sections of graded or bladed swathes
3380-22	Basalt lithic scatter
3380-23	Historic trash and burned refuse (domestic food containers) adjacent to a fallen historic metal rigging
3380-24	Quartz lithic scatter. Tall rock outcroppings nearby may have served as hunting blinds.
3380-25	Bomb Debris at 25 Locations and Main Target via Jayjay Road
3380-26	GLO marker 1917 S31/S32 T7N R1W
3380-27	GLO marker. ¼ marker for section 5. 1917.
3380-28	GLO marker. ¼ marker for section 2. 1917.
3380-29	GLO Marker. Corner marker T6N R1W, sections 5 & 6. 1917.
3380-30	GLO marker. Corner marker T7N R1W, sections 29 & 32. 1958.
3380-31	Historic Road. Recorded by Æ as PL-LUGO-TSIM-009, but no record prepared.
3380-ISO-04	Secondary rhyolite flake. 56.75mm x 77.9mm x 16.25mm
3380-ISO-05	Hole-in-top can
3380-ISO-06	Distal fragment of a Chalcedony biface projectile point. 40.8mm x 26.9mm x 5.3mm
3380-ISO-07	Calvert Whiskey bottle. Brown glass. Anchor Hocking maker's mark. "D 126 / AH Makers mark / 67-47 / Made in USA / PATD 88 454"

Table 4.4-1. Cultural Resource Sites Recorded within the Stagecoach Solar Generation Plant

Temporary Field No.	Brief Description
3380-ISO-08	Food can punch open 2.625” D x 3” H
3380-ISO-09	Upright tobacco tin
3380-ISO-10	Basalt biface thinning flake, black. 23.45mm x 32.4mm x 5mm
Æ-3691-001-ISO	Chalcedony bifacial tool or early stage projectile point. 4.6 by 2.7 by 0.9 cm
Æ-3691-002-ISO	Mottled cream and gray chert early stage biface thinning flake, 4.2 by 3.0 by 1.1 cm
Æ-3691-003-ISO	Reddish-brown chert flake tool and a rhyolite flake fragment. The flake tool is 5.0 by 5.1 by 1.6 cm
Æ-3691-004-ISO	A chert biface thinning flake fragment
Æ-3691-005-ISO	GLO Marker Corner marker T6N, R1 W, Section 6 and T7N, R1W, Section 31. 1917. Æ recorded GLO Markers as isolates. Glo Markers are identified as sites in this report.
Æ-3691-006-ISO	Distal fragment of a green, fine-grained quartzite biface thinning flake 2.6 by 1.5 by 0.2 cm
Æ-3691-007H	Consists of multiple segments of a historic road. Æ recorded this resource north of Aspen’s 3380-21. Likely related meanderings with no obvious purpose; not roads per se.
Æ-3691-008-ISO	GLO Marker Corner marker T7N, R1W, Sections 6 and 7. 1917. Æ recorded GLO Markers as isolates. GLO Markers are identified as sites in this report.
Æ-3691-009-ISO	Reddish-brown chert projectile point tip 4.0 by 2.7 by 0.5 cm
Æ-3691-010-ISO	Unifacial granitic milling slab 30.0 by 23.5 by 10.8 centimeters
P-36-024248	Lucerne Valley Cut-off (Bear Lake Road)
P-36-027423	Historic sanitary cans. Not relocated.
P-36-027430	Historic cans. Not relocated.

The isolated historic era resources previously recorded as P-36-027423 and P-36-027430 were not found in the 2017 or 2020 surveys (Tennyson 2017 [Confidential]; EIR Appendix G). Additionally, Table 4.4-2 lists eleven resources identified in the record search within the 1-mile radius of the Stagecoach Solar Generation Plant, none of which were found eligible for the National Register of Historic Places (NRHP) or CRHR.

Table 4.4-2. Cultural Resource Sites Recorded within a 1-Mile Radius of the Stagecoach Solar Generation Plant	
Primary or Temporary Field No.	**Brief Description**
P-36-027425	Isolated historic-era can
P-36-027426	Isolated historic-era can
P-36-027427	Isolated historic-era can
P-36-027428	Isolated historic-era tobacco tin
P-36-027429	Two isolated historic-era oil or gasoline cans
P-36-027431	Isolated historic-era sanitary can
P-36-061200	Isolated prehistoric basalt flake
P-36-061201	Four isolated Prince Albert tobacco tins
PL-LUGO-TSIM-009	Historic period dirt road
PL-LUGO-TSIM-015	1917 GLO survey marker
PL-LUGO-TSIM-ISO-004	Isolated prehistoric projectile point

Findings Summary for Stagecoach Gen-tie Line

The literature review and records search indicated that eight previous studies had been conducted in the record search area (Proposed Project and 1-mile buffer). Three resources had been previously recorded in the Stagecoach Gen-tie Line portion of the Proposed Project area. These resources include two historic era dirt roads (P-36-24189 and P-36-24190) and the historic SR-247 (P-36-27410).

The intensive pedestrian survey identified a total of 14 resources within the Stagecoach Gen-tie Line portion of the Proposed Project area, 13 of which are historic era, and one is prehistoric (Table 4.4-3). Two historic era resources were found to be previously recorded (Appendix G).

Table 4.4-3. Cultural Resource Sites Recorded within the Stagecoach Gen-tie Line Disturbance Area	
Temporary Field No.	**Brief Description**
3380-01	GLO marker 1917 Corner marker for S9/S10/S16/S15 T6N R1W
3380-02	GLO Marker 1917 ¼ marker for S10/S15 T6N R1W
3380-03	Historic can scatter
3380-04	Water tank features
3380-05	GLO Marker Corner marker for S34/S35/S3/S2. Dated 191(X) – last digit not stamped. Likely 1917.

Table 4.4-3. Cultural Resource Sites Recorded within the Stagecoach Gen-tie Line Disturbance Area	
Temporary Field No.	**Brief Description**
3380-06	Fence post
3380-07	Probable mining road
3380-08	Probable mining road
3380-09	Historic enigmatic rock alignment
3380-10	1936 stone and mortar house built by Lucerne Valley homesteader Bessie Stromberg
3380-11	Fence and place marker
3380-12 (P-36-021201)	Well head and scattered glass and nails. Well measures 10¼" (D) x 17" (H) dug into small pit measuring 2' deep with diameter of 16'. Bottle base located 2m west of well with makers mark of DL within square and backward slash.
3380-13	Primarily a prehistoric site of considerable age with flakes, flake tools, bifaces, metate and debitage similar to Gypsum Period or possibly earlier Lake Mojave Period occupation ca 10,000 BP. Historic cans and buried historic refuse deposit incidental to the site and non-contributing.
3380-14 (P-36-021200)	Historic prospect or possibly an earthen well

Additionally, the record search identified 37 resources within the 1-mile radius of the Stagecoach Gen-tie Line, listed in Table 4.4-4 below. One resource (P-36-014876 and shown in ***bold and italics*** below) has been recommended eligible for the NRHP and CRHR, therefore, making it subject to indirect effects.

Table 4.4-4. Cultural Resource Sites Recorded within a 1-Mile Radius of the Stagecoach Gen-tie Line	
Primary No.	**Brief Description**
P-36-002145	Prehistoric village site – Site has been destroyed
P-36-002336	Historic era foundations, rock wall, and refuse scatter
P-36-002337	Historic era site consisting of foundations, wire fence, well casing, refuse, L-shaped berm and two fruit trees
P-36-003750	Prehistoric site consisting of 3–5 bedrock metates
P-36-014876	***SCE Lugo-Pisgah No. 1 Transmission Line.***
P-36-014943	Isolated historic can
P-36-021160	Historic era cement foundations

Table 4.4-4. Cultural Resource Sites Recorded within a 1-Mile Radius of the Stagecoach Gen-tie Line	
Primary No.	**Brief Description**
P-36-021163	Isolated prehistoric metate fragment
P-36-021164	Isolated prehistoric chert flake
P-36-021165	Isolated prehistoric basalt biface fragment
P-36-021166	Isolated prehistoric basalt flake
P-36-021200	Historic era prospecting pit and open cut drainage
P-36-021201	Historic era uncapped well
P-36-021202	Isolated prehistoric red chert flake
P-36-024156	Historic dirt road
P-36-024157	Historic paved road known as Fern Road
P-36-024158	Segment of a historic dirt road
P-36-024223	Historic era dirt road known as Algoman Road/Brucite Road/Johnson Road
P-36-024224	Historic era dirt road known as Chuckwalla Road
P-36-024225	Historic era refuse scatter
P-36-024245	Historic access road for SCE Lugo-Pisgah No. 1 Transmission Line (P-36-014876). This resource was integrated into P-36-014876 in 2015
P-36-024246	Segment of historic era dirt road
P-36-024247	Segment of historic era dirt road known as Selmadolph Road
P-36-024248	Historic era dirt road known as Lucerne Valley Cutoff
P-36-025668	Historic era rock ring
P-36-025669	Historic era mining features
P-36-027880	Historic era refuse scatter
P-36-028149	Historic era refuse scatter
P-36-029775	Historic era concrete troughs, well head, and chain link fence
P-36-029899	Isolated prehistoric obsidian flake
P-36-029901	Historic era homestead
P-36-032692	Historic era refuse scatter
P-36-032693	Historic era refuse scatter
P-36-032694	Historic era refuse scatter

Findings Summary for SCE Calcite Facilities

The literature review and record search conducted by ICF in 2016 identified 71 previously identified cultural resources and 7 cultural resource studies in the record search area (Proposed Project and 1-mile buffer). Of the 71 previously identified resources, 58 known resources fall within the 1-mile buffer and are listed in Table 4.4-5. Of the 58 resources, 12 resources have been recommended eligible, shown in ***bold and italics*** in the table below, for the NRHP and CRHR and would be subject to indirect impacts (Table 4.4-5). Aspen conducted a record search for the gen-tie line, and as the two Proposed Project elements overlap where they connect, the Aspen record search supplements the ICF results. As a result, the combined record searches identified a total of eight previously recorded resources within the SCE Calcite Facilities footprint. Of these eight resources, five are historic era sites, one is a historic era isolate, and two are prehistoric isolates (Appendix G).

The intensive pedestrian survey conducted by ICF, and the supplemental survey conducted by Aspen, identified a total of three new historic era isolated resources and one prehistoric site. Six historic era sites that were previously identified were found, including roads, a well, large trash scatters, and the Lugo-Pisgah transmission line.

The only resource found during the intensive pedestrian surveys that is considered eligible for the CRHR is the prehistoric site 3380-13. The site is located near the former northern shoreline of Pleistocene Lake Lucerne. Resources previously documented in this portion of the valley include a much larger distribution of prehistoric artifacts recorded as isolates in close proximity to the old lakeshore than are recorded elsewhere in the Proposed Project area. No studies of early Holocene occupation have yet been undertaken for the Lucerne Valley, and the paleoenvironmental context of Pleistocene Lake Lucerne is not well studied, although researchers posit that, based on its similarity to the other, more well understood lakes, that the paleoenvironments of Lake Lucerne may have supported Late Pleistocene to Early Holocene flora, fauna, and human populations. (Appendix G).

The Lugo-Pisgah No. 1 220 kV transmission line was recorded by URS in 2008 and has been updated by URS in 2010, SRI in 2011, Far Western in 2013 and by Michael Brandman and Associates in 2014. The resource was evaluated for CEQA and National Historic Preservation Act (NHPA) section 106 eligibility by Pacific Legacy in 2015 and was found eligible as an individual property through survey evaluation (3S) under Criterion A/1 for its direct association with the history of the Boulder Dam/Hoover Dam construction and hydroelectric generation project and for serving as Southern California Edison’s first two lines to transmit high voltage electricity to the Los Angeles Region. Very minor modifications have been made to this transmission line over the years and it retains a high level of integrity as to design, location, materials, workmanship, feeling and association (Appendix G).

Table 4.4-5. Cultural Resource Sites Recorded within a 1-Mile Radius of the SCE Calcite Facilities	
Primary No.	**Brief Description**
P-36-003750	Bedrock milling feature
P-36-014933	Historic mining/prospecting
P-36-021160	Cement foundations
P-36-021161	Wooden power poles
P-36-021162	Cement foundations
P-36-021163	Metate fragment
P-36-021164	Flake with utilized edge
P-36-021165	Bifacially flaked base
P-36-021166	Basalt flake
P-36-021167	Metate fragment
P-36-021168	Chert flake
P-36-021202	Flaking station
P-36-024157	Historic paved road
P-36-024158	Historic graded dirt road
P-36-024189	Historic graded road
P-36-024204	Historic road segments
P-36-024225	Historic refuse scatter
P-36-025668	Historic rock ring
P-36-025669	Historic mining/prospecting and refuse scatter
P-36-027877	Historic rock ring
P-36-027878	Historic refuse scatter
P-36-027880	Historic refuse scatter
P-36-027902	Historic rock ring
P-36-027904	***Prehistoric hearth features***
P-36-027905	***Prehistoric hearth features and associated artifacts***
P-36-027906	***Prehistoric rock features***
P-36-027907	***Unknown***
P-36-027922	Prehistoric lithic scatter
P-36-027923	***Prehistoric rock feature and associated artifacts***
P-36-027924	Rock feature of unknown age
P-36-027925	***Prehistoric rock feature and associated artifacts***
P-36-027927	***Prehistoric rock feature***

Table 4.4-5. Cultural Resource Sites Recorded within a 1-Mile Radius of the SCE Calcite Facilities	
Primary No.	**Brief Description**
P-36-027928	***Prehistoric hearth features and associated artifacts***
P-36-027943	Prehistoric portable milling slab
P-36-028027	Highway or trail
P-36-028048	Highway or trail
P-36-028050	Prehistoric projectile point fragment
P-36-028066	Historic rock feature and associated artifacts
P-36-028093	***Prehistoric rock features***
P-36-028094	***Multicomponent site: rock features***
P-36-028095	Historic rock feature and debris scatter
P-36-028108	Historic refuse scatter
P-36-028109	Historic mining/prospecting
P-36-028145	Prehistoric lithic scatter and projectile point fragment
P-36-028147	Prehistoric lithic scatter
P-36-028148	***Prehistoric heated rock feature***
P-36-028149	Historic foundations and debris scatter
P-36-028150	Historic foundations, pits, and debris scatter
P-36-028151	Historic foundations, well, walls
P-36-028167	Prehistoric biface fragment
P-36-028168	Prehistoric biface preform
P-36-028169	Historic mining/prospecting
P-36-028200	Historic debris scatter
P-36-028201	Historic mining/prospecting
P-36-028356	Historic graded road
P-36-028365	Historic graded road
P-36-028417	Historic refuse
P-36-028418	Historic refuse

4.4.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Appendix A. Local policies are summarized below.

Because the State has supremacy over local governments, CSLC's school land management and lease issuance preempt any conflicting local requirements. Compatible

local requirements remain applicable to activity on the school land parcel. CSLC considers preempted local requirements to determine the consistency of the Proposed Project with local plans and policies.

San Bernardino Countywide Plan: 2020 County Policy Plan

The 2020 County Policy Plan serves as its General Plan. The Cultural Resources Element includes the following policies regarding cultural resources:

> *Cultural Resources Element – Cultural resources provide both tangible and intangible links to the past. Such resources may include archaeological sites, sacred landscapes, historic buildings, and even culturally important plants and animals. These resources are valuable in that they can serve to recognize the diversity of our county's many previous, current, and future inhabitants. Not only can a resource be a memorial to historical events and individuals, but it can also be an important object/place of modern cultural significance, as well as be something that will contribute to the continuance of a community's cultural identity. Additionally, paleontological resources, which most commonly manifest as fossils related to animals, plants, and the ecosystem, provide great insight into our county's past prior to human habitation. As such, it is vital that we find and implement culturally appropriate ways to preserve and conserve these resources, while also continuing to grow and develop in the unincorporated parts of our county.*
>
> ***Purpose***
>
> *The Cultural Resources Element:*
>
> - *Establishes direction on notification, coordination, and partnerships to preserve and conserve cultural resources*
> - *Provides guidance on how new development can avoid or minimize impacts on cultural resources*
> - *Provides direction on increasing public awareness and education efforts about cultural resources*
>
> ***Principles***
>
> *We believe:*
>
> - *Today's generations are stewards of the county's cultural history and are responsible for conserving it for future generations*
> - *Preserving and celebrating cultural resources enhances our understanding of the world in which we live*
> - *Cultural resources are valuable assets that attract visitors and support local businesses*

Goals & Policies

Goal CR-2 Historic and Paleontological Resources

Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.

Policy CR-2.1 ***National and state historic resources.*** *We encourage the preservation of archaeological sites and structures of state or national significance in accordance with the Secretary of Interior's standards.*

Policy CR-2.2 ***Local historic resources.*** *We encourage property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.*

Policy CR-2.3 ***Paleontological and archaeological resources.*** *We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archaeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.*

Policy CR-2.4 ***Partnerships.*** *We encourage partnerships to champion and financially support the preservation and restoration of historic sites, structures, and districts.*

Policy CR-2.5 ***Public awareness and education.*** *We increase public awareness and conduct education efforts about the unique historic, natural, tribal, and cultural resources in San Bernardino County through the County Museum and in collaboration with other entities.*

4.4.3 Significance Criteria

Historical resources, as defined in this section, can include historic era resources, built-environment resources, and archaeological resources, as defined in Section 4.4.1.2. Impacts to historical resources are considered significant if the Proposed Project would result in any of the following effects:

- Cause a substantial adverse change in the significance of a historical (Impact CUL-1) or archaeological resource (Impact CUL-2) pursuant to State CEQA Guidelines[15] section 15064.5 The significance of an historical resource is materially impaired when a project:
    - Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

[15] The "State CEQA Guidelines" refers to California Code of Regulations, Title 14, Chapter 3.

- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Public Resources Code section 5020.1, subdivision (k) or its identification in an historical resources survey meeting the requirements of Public Resources Code section 5024.1, subdivision (g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA

- Disturb any human remains, including those interred outside of formal cemeteries (Impact CUL-3)

4.4.4 Environmental Impact Analysis and Mitigation

This section analyzes impacts to historical resources identified within the Proposed Project, focusing on those that may be eligible for inclusion on the CRHR. Cultural resources are places or objects that are important for historical, scientific, and religious reasons and are of concern to cultures, communities, groups, or individuals. These resources may include buildings and architectural remains, archaeological sites and other artifacts that provide evidence of past human activity, human remains, or Traditional Cultural Properties.

There are provisions in the State CEQA Guidelines and other provisions of the California Public Resources Code for the protection and preservation of significant cultural resources (i.e., “historical resources” and “unique archaeological resources”). The State CEQA Guidelines provide three ways in which a resource can be a “historical resource,” and thus a cultural resource meriting analysis: (1) the resource is listed on the CRHR; (2) the resource is included in a local register of historical resources (pursuant to Pub. Resources Code, § 5020.1, subd. (k)), or identified as significant in an historical resources survey (meeting the criteria in Pub. Resources Code, § 5024.1, subd. (g)); or (3) the lead agency determines the resource is “historically significant” by assessing CRHR listing guidelines that parallel the federal criteria. (State CEQA Guidelines, § 15064.5, subd. (a)(1)-(3)). To qualify as a historical resource under (1) or (3), the resource must also retain the integrity of its physical identity that existed during its period of significance. Integrity is evaluated with regard to retention of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852, subd. (c)). Lastly, under California State law, Native American human remains and associated grave goods are granted special consideration.

Mitigation of cultural resources that are found to be ineligible for CRHR-listing is not required (36 C.F.R. 800 and State CEQA Guidelines, § 15064.5, subd. (c)(4)).

This analysis considers both direct and indirect impacts to cultural resources.

- **Direct impacts** to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface ground disturbance, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historical built-environment resources when those buildings or structures must be removed to make way for new buildings or structures or when the vibrations of construction impair the stability of historical buildings or structures nearby. New buildings or structures can have direct impacts on historical built environment resources when the new buildings or structures are stylistically incompatible with their neighbors and the setting, or when the new buildings or structures produce a harmful effect to the materials or structural integrity of the historical built environment resources, such as emissions or vibrations.
- **Indirect impacts** to archaeological resources are those that may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historical built environment resources can suffer indirect impacts when project construction creates potentially damaging noise and vibration, improved accessibility and vandalism, or greater weather exposure. The long-term presence of transmission lines or towers also has the potential to result in indirect visual impacts to significant cultural resources where setting is a key contributor to the property's importance.

Additionally, unknown and potentially significant buried resources could be inadvertently unearthed during ground-disturbing activities associated with construction of the Proposed Project. Destruction of potentially significant cultural resources would be a significant impact.

The impacts of the Stagecoach Solar Generation Plant are presented in Section 4.4.4.1, and the Stagecoach Gen-tie Line and SCE Calcite Facilities are analyzed in Sections 4.4.4.2 and 4.4.4.3, respectively.

4.4.4.1 Impacts of the Stagecoach Solar Generation Plant

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines section 15064.5.

No known historical resources would be affected by construction or operation of the Stagecoach Solar Generation Plant, but the inadvertent disturbance or destruction of a presently unidentified cultural resource could result in a change to the significance of the resource, if it is determined to be eligible for listing in the NRHP or CRHR. **(Less than Significant with Mitigation)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, a historical resource is a prehistoric or historic aged resource that is recommended eligible, determined eligible, or listed on the NRHP or CRHR. The historical resources evaluated in this impact may be prehistoric, or from the historic era, including built-environment resources. Only historical resources are evaluated under Impact CUL-1.

Direct Effects. As defined in Section 4.4.1, the combined surveys identified a total of 37 cultural resources within the Stagecoach Solar Generation Plant; these resources are at risk for direct impacts by Proposed Project construction activities. None of these resources are considered historical resources under CEQA because they are not eligible for listing on the CRHR. Therefore, the construction and operation of the Proposed Project would not directly impact known historical resources, and no mitigation would be required.

Indirect Effects. No NRHP or CRHR listed or eligible resources were identified within the indirect effects area, therefore, no indirect impacts would occur.

Unanticipated Buried Resources. There is the potential for unknown buried resources to be encountered during the extensive ground disturbing activity that would be required for construction of the Proposed Project. Inadvertent disturbance or destruction of an unidentified cultural resource or Tribal cultural resource could damage or destroy the resource or change its context. In order to define the likelihood of encountering these resources during construction, MM CUL-1a requires that a qualified archaeologist be provided by the Applicant and MM CUL-1d requires monitoring during all ground disturbance.

Prior to ground disturbing activity, the CSLC's consultant will complete subsurface geo-archaeological testing, using methods acceptable to the San Manuel Band of Mission Indians (SMBMI), which will also monitor the testing (see additional discussion in Section 4.5, *Cultural Resources – Tribal*). The results of this testing will be incorporated in the Cultural Resources Management Plan (required in MM CUL-1b) and will inform the level of monitoring that is needed (required in MM CUL-1d).

If a previously unidentified resource were to be discovered and determined to be eligible for listing in the CRHR, the Proposed Project activities could result in a change to the significance of the resource. Implementation of the following measures would reduce impacts to a less than significant level: Mitigation Measures (MMs) CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), CUL-1f (Monitoring Report), TCR-1a (Tribal Monitoring), and TCR-1b (Treatment of Cultural Resources).

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist. Prior to the start of construction, the Applicant shall propose a Cultural Resources Specialist (CRS) to manage and direct implementation of all cultural resources requirements during construction. The CRS shall have training and background that conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61). The CRS shall be retained by the Applicant to supervise monitoring of construction excavations and to prepare the project's Cultural Resources Management Plan (see MM CUL-1b) for the approved project. The CRS shall be an archaeologist with demonstrated prior experience in the southern California desert and previous experience working with southern California Tribal Nations. A copy of the CRS' qualifications shall be provided to the CSLC for review and approval at least 60 days before the start of construction.

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan. Prior to start of construction, the Applicant shall develop a Cultural Resource Monitoring Plan (CRMP) that addresses the details of all activities and provides procedures that must be followed in order to reduce the impacts to cultural and historic resources to a level that is less than significant as well as address potential impacts to undiscovered buried archaeological resources and Tribal cultural resources associated with the approved Project. Specifics requirements of the CRMP are:

- The CRMP shall be provided to the CSLC and the SMBMI representative for review and approval at least 60 days before the start of construction
- The CRMP shall incorporate the results of preconstruction geoarchaeological testing including any project-related design or route changes that would successfully result in resource avoidance. Based on the geoarchaeological test results, the CRMP shall define the level of archaeological monitoring that is recommended.
- The CRMP shall specify the level of tribal participation in monitoring, the qualifications for archaeological monitors, the handling of discoveries, and the process for evaluating unanticipated resources (as defined in MM CUL-1e)
- The CRMP shall include provisions for treatment of cultural resources that are Native American in nature consistent with MM TCR-1b (Treatment of Cultural Resources; see Section 4.5, *Cultural Resources – Tribal)*

MM CUL-1c: Develop and Implement Cultural Resources Environmental Awareness Training. Prior to ground disturbance, the CSLC-approved Cultural Resources Specialist will provide Cultural Sensitivity Training for all construction personnel. Training shall include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the protocols that apply in the event unanticipated cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated;

and any other appropriate protocols. This is a mandatory training, and all construction personnel must attend prior to beginning work on the project site. A copy of the agreement and a copy of the sign in sheet shall be kept ensuring compliance with this mitigation measure.

MM CUL-1d: Archaeological Monitoring. Due to the heightened cultural sensitivity of the proposed project area, one or more California State Lands Commission staff-approved archaeological monitors with at least 3 years of regional experience in archaeology, shall be present for all ground-disturbing activities that occur within the approved Project area (including, but not limited to, tree/shrub removal and planting, clearing/grubbing, grading, excavation, trenching, compaction, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [benches, signage, boulders, walls, seat walls, fountains, etc.], and archaeological work). A sufficient number of archaeological monitors, under the direction of the CRS, shall be present each workday to ensure that simultaneously occurring ground disturbing activities receive appropriate levels of monitoring coverage, as defined in the CRMP (MM CUL-1b) and in MM TCR-1a (Tribal Monitoring) in Section 4.5, *Cultural – Tribal Resources*. The archaeological monitor(s) shall complete daily monitoring forms. The archaeological monitor(s), in coordination with the CRS, will have the authority to increase or decrease the monitoring effort should the monitoring results indicate that a change is warranted.

MM CUL-1e: Unanticipated Discoveries. If construction personnel unearth Tribal cultural resources, or precontact or historic-period archaeological resources during Project implementation, all Project activities within 100 feet will halt until the CRS or an approved archaeological monitor determines the significance of the discovery. Precontact archaeological materials/Tribal cultural resources might include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps/rock rings, ceremonial sites, and trails. Historic period materials may include structural remnants (such as cement foundations), historic era objects (such as bottles and cans), and sites (such as refuse deposits or scatters).

After stopping Project activities, the approved archaeologist will determine impacts, significance, and mitigation in consultation with local Native American representatives. If the resource is a Tribal Cultural Resource, substantial adverse changes to this resource shall be avoided or minimized following the measures identified in Public Resources Code section 21084.3, subdivision (b), if feasible, unless other equally or more effective measures are mutually agreed on by CSLC, the archaeologist, and the interested local Native American representative(s).

A treatment plan, if needed to address a find, shall be developed cooperatively by the archaeologist and, for Tribal cultural resources, the interested local Native American representative(s). The plan will be submitted to the appropriate tribal representatives and CSLC staff for review, input, and concurrence prior to its implementation.

Protection in place of Tribal cultural resources shall be prioritized, if feasible; if the archaeologist or Tribal representative determines that damaging effects on the cultural Tribal cultural resource can be avoided in place, then work in the area may resume provided the area of the find is clearly marked for no disturbance. If avoidance in place of tribal cultural resources is infeasible, the treatment plan shall include measures that place priority on Tribal self-determination over collection and curation, including the option to repatriate (rebury) materials nearby at a location of their choosing, and to transfer possession/ownership to the culturally affiliated Tribe.

Title to all archaeological sites, historical or cultural resources, and Tribal cultural resources on State-owned school lands is vested in the state and under CSLC jurisdiction. The final disposition of archaeological, historical, and Tribal cultural resources recovered on state lands under CSLC jurisdiction must be approved by the CSLC.

MM CUL-1f: Monitoring Report. Within 6 months of completing construction, a Cultural Resources Monitoring Report shall be submitted to the CSLC. The report shall include evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting and evidence that any artifacts have been treated in accordance with procedures stipulated in the Cultural Resources Management Plan.

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Impact CUL-2: The Project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines section 15064.5.

No known unique archaeological resources would be affected by construction or operation of the Stagecoach Solar Generation Plant, but inadvertent disturbance or destruction of a presently unidentified cultural resource could result in a change to the significance of the resource, if it is determined to be a unique archaeological resource. **(Less than Significant with Mitigation)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, an archaeological resource is an archaeological artifact, object, or site that contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, has a special quality such as being the oldest of its type or the best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person. An archaeological resource may be from the historic era, including built-environment resources, or it may be prehistoric. This type of resource

differs from the historical resources evaluated in Impact CUL-1 because a unique archaeological resource does not have to be eligible for the NRHP or CRHR. A unique archaeological resource may also be a Tribal cultural resource (see Section 4.5, *Cultural Resources – Tribal*).

Direct Effects. There are no known unique archaeological resources (as defined above) within the Proposed Project footprint. Therefore, the Proposed Project would not have a direct impact to known archaeological resources.

Indirect Effects. There are no known unique archaeological resources within the indirect effects area, therefore, indirect impacts would not occur.

Unanticipated Buried Resources. During ground disturbing activities, it is possible to encounter unknown buried archaeological resources or Tribal cultural resources. Inadvertent disturbance or destruction of an unanticipated cultural resource or Tribal cultural resource could result in a change to the significance of the resource if it is determined to be a unique archaeological resource or Tribal cultural resource under CEQA. Implementation of the following measures would reduce impacts to a less than significant level: MMs CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), and CUL-1f (Monitoring Report), TCR-1a (Tribal Monitoring), and TCR-1b (Treatment of Cultural Resources).

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan

MM CUL-1c: Develop and Implement Cultural Resource Environmental Awareness Training

MM CUL-1d: Archaeological Monitoring

MM CUL-1e: Unanticipated Discoveries

MM CUL-1f: Monitoring Report

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Impact CUL-3: The Project could disturb human remains, including those interred outside of formal cemeteries.

Ground disturbing activities during construction of the Stagecoach Solar Generation Plant could adversely impact presently unidentified human remains, including those interred outside of dedicated cemeteries. **(Less than Significant with Mitigation)**

Impact Discussion

A review of the archaeological record search and results of recent surveys did not identify any reports of human remains in the Proposed Project area. However, because the Mojave Desert has long supported human occupation, previously unidentified human remains could be found during construction, and directly impacted by the Proposed Project. If human remains or related resources are discovered, such resources shall be treated in accordance with state and local regulations and guidelines that govern the disclosure, recovery, relocation, and preservation of human remains (State CEQA Guidelines, § 15064.5, subd. (e)). Implementation of MM CUL-3 would ensure that this impact would be less than significant.

Mitigation Measures

MM CUL-3: Treatment of Human Remains. In accordance with state law (Health & Saf. Code, § 7050.5; Pub. Resources Code, § 5097.98), if human remains are found, all ground disturbing activities shall halt within 165 feet (50 meters) of the discovery and an Environmentally Sensitive Area (ESA) physical demarcation/barrier constructed. The on-site lead/foreman/CRS shall then immediately (within 24 hours) notify the County Coroner, the CSLC. No further excavation or disturbance within the ESA or any nearby area reasonably suspected to overlie potential remains shall occur until the County Coroner has determined whether the remains are subject to his or her authority. The County Coroner must make this determination within 2 working days of notification of the discovery (pursuant to Health & Saf. Code, § 7050.5, subd. (b)). If the County Coroner determines that the remains do not require an assessment of cause of death and that the remains are, or are believed to be Native American, the Coroner must notify the Native American Heritage Commission (NAHC) by telephone within 24 hours, which must in turn immediately notify those persons it believes to be the Most Likely Descendant (MLD) of the deceased Native American. The MLD shall be allowed to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and funerary objects shall be treated and disposed of with appropriate dignity. The MLD, CSLC, and other landowner if applicable, agree to discuss in good faith what constitutes “appropriate dignity” as that term is used in the applicable statutes. The MLD shall complete their inspection and make recommendations within forty-eight (48) hours of the site visit, as required by California Public Resources Code section 5097.98.

Reburial of human remains and/or funerary objects (those artifacts associated with any human remains or funerary rites) shall be accomplished in compliance with California

Public Resources Code section 5097.98, subdivisions (a) and (b). The MLD, in consultation with the landowner, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains and funerary objects. All parties are aware that the MLD may wish to rebury the human remains and associated funerary objects on or near the site of their discovery, in an area that shall not be subject to future subsurface disturbances. On-site reburial in a mutually agreed on location shall be accommodated as much as feasible.

It is understood by all Parties that revealing the location of a site of any reburial of Native American human remains or cultural artifacts would endanger the remains or artifacts to vandalism and looting. Maintaining the confidentiality of such information helps respect and preserve reburials and artifacts. Accordingly, public agencies should withhold from public disclosure information related to such reburials or artifacts, pursuant to the specific exemption set forth in California Government Code section 6254, subdivision (r).

4.4.4.2 Impacts of the Stagecoach Gen-tie Line

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines section 15064.5.

No known historical resources would be directly affected by construction or operation of the Stagecoach Gen-tie Line, but one historical resource would be indirectly affected and no mitigation would reduce the severity of this effect. Inadvertent disturbance or destruction of a presently unidentified cultural resource could result in a change to the significance of the resource, if it is determined to be eligible for listing in the NRHP or CRHR. **(Significant and Unavoidable)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, a historical resource is a prehistoric or historic aged resource that is recommended eligible, determined eligible, or listed on the CRHR.

Direct Effects. One previously recorded resource, P-36-027410/P-36-028005 (SR-247) was recommended eligible for the CRHR under Criterion 1 and is considered a historical resource under CEQA. Construction of the Stagecoach Gen-tie Line would not modify the road itself, so no direct impacts to the resource would occur.

Indirect Effects. The Stagecoach Gen-tie Line has the potential to create indirect effects to two CRHR-eligible resources: SR-247 (historically called Barstow Road) and the SCE Lugo-Pisgah 220 kV transmission line.

SR-247. The installation of the Stagecoach Gen-tie Line could affect a segment of the CRHR-eligible SR-247, due to the visible presence of the transmission line. The gen-tie

line would generally parallel the highway for nearly its entire length and would cross it twice. The resource was recommended eligible for the NRHP/CRHR under Criterion A/1 for its use as the main thoroughfare between the desert communities of Lucerne Valley and Yucca Valley, allowing for a second wave of settlement.

The gen-tie line would be visible along an approximately 5-mile segment of the 78-mile historic highway. A visual simulation was prepared to allow assessment of the visual changes that would be apparent to viewers along this 5-mile segment of Barstow Road (see Section 4.1, *Aesthetics/Light and Glare*, Figure 4.1-5a and Figure 4.1-6a, KOPs [Key Observation Points] 4 and 5). The analysis from KOP 4 found that the introduction of the gen-tie into in the existing landscape at this point, which has almost no existing structures, would create Moderate to High visual contrast, which becomes more noticeable as travelers on SR-247 approach the two locations where the gen-tie line would cross the highway. Even with the implementation of Aesthetics/Light and Glare MMs ALG-7a (Surface Treatment of Project Structures and Buildings) and ALG-7b (Project Design), the aesthetics analysis concludes that the visual impacts would still be significant. Therefore, this segment of historic Barstow Road would be subject to a significant and unavoidable indirect effect.

SCE Lugo-Pisgah No. 1/No. 2 Transmission Line. Indirect visual impacts would also occur to a segment of the CRHR-eligible resource P-36-014876, the SCE Lugo-Pisgah No. 1/No. 2 220 kV transmission line. This resource was recommended eligible for the NRHP/CRHR under Criteria A/1 for its direct association with the history of the construction of Boulder Dam/Hoover Dam and for its contribution to the hydroelectric generation project serving as SCE's first two lines to transmit high voltage electricity to the Los Angeles Region. Previous evaluations found that the setting surrounding the Lugo-Pisgah No. 1 and No. 2 Transmission Line has not been identified as a contributing element to the significance and eligibility of the line (Becker 2013 and Dudek 2018 [Confidential]). Rather, the importance of the Lugo-Pisgah No. 1 and No. 2 Transmission Lines is based upon the electrical voltage technology, length of span, historical connection, and association with the Hoover Dam and the conveyance of electricity between the Hoover Dam and the Los Angeles region. Therefore, indirect visual impacts to P-36-014876 are considered less than significant.

Unanticipated Buried Resources. There is the potential for unknown buried resources to be encountered during the ground disturbing activity that would be required for construction of the Stagecoach Gen-tie Line. Inadvertent disturbance or destruction of an unidentified cultural resource or Tribal cultural resource could damage or destroy the resource or change its context. In order to define the likelihood of encountering these resources during construction, MM CUL-1a requires that a qualified archaeologist be provided by the Applicant and MM CUL-1d requires monitoring during all ground disturbance.

Prior to ground disturbing activity, the CSLC's consultant will complete subsurface archaeological testing, using methods acceptable to the SMBMI, which will also monitor

the testing (see additional discussion in Section 4.5, *Cultural Resources – Tribal*). The results of this testing will be incorporated in the Cultural Resources Management Plan (required in MM CUL-1b) and will inform the level of monitoring that is needed (required in MM CUL-1d).

If a previously unidentified resource were to be discovered and determined to be eligible for listing in the CRHR, the Proposed Project activities could result in a change to the significance of the resource. Implementation of the following measures would reduce impacts to a less than significant level: Mitigation Measures (MMs) CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), CUL-1f (Monitoring Report), TCR-1a (Tribal Monitoring) and TCR-1b (Treatment of Cultural Resources).

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan

MM CUL-1c: Develop and Implement Cultural Resource Environmental Awareness Training

MM CUL-1d: Archaeological Monitoring

MM CUL-1e: Unanticipated Discoveries

MM CUL-1f: Monitoring Report

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Residual Impacts

Construction of the Stagecoach Gen-tie Line would cause a long-term and unmitigable visual impact to a segment of P-36-027410 (Barstow Road). Implementation of mitigation measures would ensure that direct or indirect impacts affecting other known or currently unknown historical resources would be minimized. New resources found during construction would be properly avoided, treated, or recorded. As a result, no additional substantial residual impacts would be likely to occur.

Impact CUL-2: The Project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines section 15064.5.

No known unique archaeological resources would be affected by construction or operation of the Stagecoach Gen-tie Line, but inadvertent disturbance or destruction of a presently unidentified cultural resource could result in a change to the significance of the resource, if it is determined to be a unique archaeological resource. **(Less than Significant with Mitigation)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, an archaeological resource is an archaeological artifact, object, or site that contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, has a special quality such as being the oldest of its type or the best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person. An archaeological resource may be from the historic era, including built-environment resources, or it may be prehistoric. This type of resource differs from the historical resources evaluated in Impact CUL-1 because a unique archaeological resource does not have to be eligible for the NRHP or CRHR. A unique archaeological resource may also be a Tribal cultural resource.

Direct Effects. The intensive pedestrian survey identified a total of 14 resources within the Stagecoach Gen-tie Line portion of the Proposed Project area, 13 of which are historic in age, and one resource is prehistoric in age (Appendix G).

The resources include isolated artifacts, sparse historic refuse scatters, segments of historic mining roads, remnants of a homestead, fence lines, water tank features, and GLO survey markers. All of the known resources do not meet the criteria to be a unique archaeological resource per CEQA. Therefore, the Proposed Project would not have a direct or indirect impact to known archaeological resources.

Indirect Effects. There are no known unique archaeological resources within the indirect effects area, therefore, indirect effects will not occur.

Unanticipated Buried Resources. During ground disturbing activities, it is possible to encounter unknown buried archaeological resources or Tribal cultural resources. Inadvertent disturbance or destruction of an unanticipated cultural resource or Tribal cultural resource could result in a change to the significance of the resource, if it is determined to be a unique archaeological resource or Tribal cultural resource under CEQA. Implementation of the following MMs would reduce impacts to a less than significant level: CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological

Monitoring), CUL-1e (Unanticipated Discoveries), and CUL-1-f (Monitoring Report), TCR-1a (Tribal Monitoring) and TCR-1b (Treatment of Cultural Resources).

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan

MM CUL-1c: Develop and Implement Cultural Resource Environmental Awareness Training

MM CUL-1d: Archaeological Monitoring

MM CUL-1e: Unanticipated Discoveries

MM CUL-1f: Monitoring Report

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Impact CUL-3: The Project could disturb human remains, including those interred outside of formal cemeteries.

Ground disturbing activities during construction of the Stagecoach Gen-tie Line could adversely impact presently unidentified human remains, including those interred outside of dedicated cemeteries. **(Less than Significant with Mitigation)**

Impact Discussion

A review of the archaeological record search and results of recent surveys did not identify any reports of human remains in the Proposed Project area. However, previously unidentified human remains could be found during construction, and directly impacted by the Proposed Project. If human remains or related resources are discovered, such resources shall be treated in accordance with state and local regulations and guidelines that govern the disclosure, recovery, relocation, and preservation of human remains (State CEQA Guidelines, section 15064.5, subd. (e)). Implementation of MM CUL-3 would ensure that this impact would be less than significant.

Mitigation Measures

MM CUL-3: Treatment of Human Remains

4.4.4.3 Impacts of the SCE Calcite Facilities

Impact CUL-1: The Project could cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines section 15064.5.

Two historical resources within the SCE Calcite Facilities footprint would be impacted by the Proposed Project but with implementation of mitigation, impacts would be less than significant. **(Less than Significant with Mitigation)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, a historical resource is a prehistoric or historic aged resource that is recommended eligible, determined eligible, or listed on the CRHR.

Direct Effects. The intensive pedestrian survey conducted by ICF, and the supplemental survey conducted by Aspen, identified a total of three new historic isolated resources and seven cultural resource sites identified previously within the SCE Calcite Facilities footprint. Two of these resources are recommended eligible for the CRHR and are considered historical resources per CEQA. The potential impact to each of these sites is described below.

Prehistoric Site 3380-13. This site is a prime example of a resource that conveys the prehistoric contexts in the Proposed Project area. It is at least of Gypsum Period age (2,000 BCE to 200 CE) but may also contain remnants of an older Lake Mojave Period (10,000 to 6,000 BCE) occupation. This historical resource has been recommended CRHR eligible under Criterion 1, 3, and 4 and would be directly impacted by construction of the SCE Calcite Facilities without implementation of mitigation. Site 3380-13 is not within the proposed substation boundary (as illustrated in Section 2.6, Figure 2-8, Calcite Facilities Location), so direct effects are not anticipated. However, avoidance of this site is important; this would be ensured primarily through implementation of MM CUL-1g (Avoidance of Environmentally Sensitive Area); this measure in conjunction with the measures for Impact CUL-1 would need to be implemented to ensure that impacts are less than significant.

SCE Lugo-Pisgah Transmission Line**.** The second historical resource that could be affected by the SCE Calcite Facilities is the SCE Lugo-Pisgah No. 1 220 kV transmission line (P-36-014876). The Proposed Project would loop-in the Lugo-Pisgah No. 1 220 kV transmission line into the SCE Calcite Facilities adding a total of approximately 5,000 feet of new transmission line (two lines of approximately 2,500 feet located side-by-side within a corridor approximately 2,500 feet long) creating the Calcite-Lugo and Calcite-Pisgah 220 kV transmission lines. Looping in the existing Lugo-Pisgah No. 1 220 kV transmission line to a new substation in close proximity would not significantly impact the resource's integrity, directly or indirectly. As a result, impacts to P-36-014876 would be less than significant and no specific mitigation is required.

Indirect Effects. Indirect visual impacts would occur as a result of the presence of the proposed SCE Calcite Facilities. There are 12 eligible resources identified within the 1-mile indirect effects area surrounding the substation. Of these, 11 are prehistoric period rock features (rock rings and hearths) and one resource is unknown. All 12 resources have been recommended eligible for the NRHP/CRHR under Criterion D/4 for the resources ability to yield, or may be likely to yield, information important in prehistory or history. The setting of these resources has not been identified as a contributing feature to their integrity, but rather the integrity of these known rocks features was based on the artifacts observed at the surface level or sub-surface level. Construction of the SCE Calcite Facilities would not impact the integrity of these resources and they would remain eligible under Criteria D/4. Therefore, the indirect visual impact is less than significant, and no mitigation would be required.

Unanticipated Buried Resources. Prior to ground disturbing activity, the CSLC's consultant will complete subsurface archaeological testing, using methods acceptable to the SMBMI, which will also monitor the testing (see additional discussion in Section 4.5, *Cultural Resources – Tribal*). The results of this testing will be incorporated in the Cultural Resources Management Plan (required in MM CUL-1b) and will inform the level of monitoring that is needed (required in MM CUL-1d).

If a previously unidentified resource were to be discovered and determined to be eligible for listing in the CRHR, the Proposed Project activities could result in a change to the significance of the resource. Implementation of the following measures would reduce impacts to a less than significant level: Mitigation Measures (MMs) CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), CUL-1f (Monitoring Report), TCR-1a (Tribal Monitoring) and TCR-1b (Treatment of Cultural Resources).

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan

MM CUL-1c: Develop and Implement Cultural Resource Environmental Awareness Training

MM CUL-1d: Archaeological Monitoring

MM CUL-1e: Unanticipated Discoveries

MM CUL-1f: Monitoring Report

MM CUL-1g: Avoidance of Environmentally Sensitive Area. SCE shall protect site 3380-13, plus a 200-foot buffer, by installing exclusion fencing or other visible markings and labeling the site as an Environmentally Sensitive Area. SCE shall ensure that this site is not affected by any construction activity.

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Impact CUL-2: The Project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines section 15064.5.

No known unique archaeological resources would be affected by construction or operation of the SCE Calcite Facilities, but inadvertent disturbance or destruction of a presently unidentified cultural resource could result in a change to the significance of the resource, if it is determined to be a unique archaeological resource. **(Less than Significant with Mitigation)**

Impact Discussion

Pursuant to State CEQA Guidelines, section 15064.5, an archaeological resource is an archaeological artifact, object, or site that contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, has a special quality such as being the oldest of its type or the best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person. An archaeological resource may be from the historic era, including built-environment resources, or it may be prehistoric. This type of resource differs from the historical resources evaluated in Impact CUL-1 because a unique archaeological resource does not have to be eligible for the NRHP or CRHR. A unique archaeological resource may also be a Tribal cultural resource.

Direct Effects. As stated above, a total of 10 cultural resources were discovered within SCE Calcite Facilities footprint. Two of these resources were found to be historical resources per CEQA and are addressed in the previous section. The remaining resources include isolated artifacts, historic trash scatters, and a well. These resources do not meet the definition of an archaeological resource per CEQA. Therefore, construction of SCE Calcite Facilities would not have a direct or indirect impact to known unique archaeological resources.

Indirect Effects. There are no known unique archaeological resources within the indirect effects area, therefore, indirect impacts would not occur.

Unanticipated Buried Resources. During ground disturbing activities, it is possible to encounter unknown buried archaeological resources or Tribal cultural resources. Inadvertent disturbance or destruction of an unanticipated cultural resource or Tribal cultural resource could result in a change to the significance of the resource, if it is determined to be a unique archaeological resource under CEQA. Implementation of mitigation measures listed below would reduce impacts to a less than significant level.

Mitigation Measures

MM CUL-1a: Retain a Cultural Resources Specialist

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan

MM CUL-1c: Develop and Implement Cultural Resource Environmental Awareness Training

MM CUL-1d: Archaeological Monitoring

MM CUL-1e: Unanticipated Discoveries

MM CUL-1f: Monitoring Report

MM TCR-1a: Tribal Monitoring (Section 4.5, *Cultural – Tribal Resources*)

MM TCR-1b: Treatment of Cultural Resources (Section 4.5, *Cultural – Tribal Resources*)

Impact CUL-3: The Project could disturb human remains, including those interred outside of formal cemeteries.

Ground disturbing activities during construction of the SCE Calcite Facilities could adversely impact presently unidentified human remains, including those interred outside of dedicated cemeteries. **(Less than Significant with Mitigation)**

Impact Discussion

A review of the archaeological record search and results of recent surveys did not identify any reports of human remains in SCE Calcite Facilities footprint. However, previously unidentified human remains could be found, and directly impacted, as there is an increasing volume of evidence for human occupation of the Mojave Desert, including the Proposed Project area, the Late Pleistocene and Early Holocene. If human remains or related resources are discovered during construction, such resources shall be treated in accordance with state and local regulations and guidelines that govern the disclosure, recovery, relocation, and preservation of human remains (State CEQA Guidelines, § 15064.5, subd. (e)). Implementation of MM CUL-3 would reduce this impact to a less than significant level.

Mitigation Measures

MM CUL-3: Treatment of Human Remains

4.4.5 Cumulative Impacts

Section 3.0, *Cumulative Scenario*, defines the foreseeable projects in the vicinity of the Proposed Project that are in the planning stages, adopted, under construction, or completed. These are projects whose impacts have the potential to combine with similar impacts resulting from the Proposed Project, thereby contributing to cumulative impacts. A radius of 10 miles was used for the cumulative scenario, since this captures any proposed development throughout Lucerne Valley. This list includes both solar and non-solar development proposals.

When the results of cultural resources pedestrian surveys are not available for the projects included in the cumulative scenario, calculating the number of cultural resources likely to exists per acre is considered an acceptable quantitative cumulative analysis method, and is used below. Central to this method is the understanding that cultural resources are a non-renewable resource. The average number of resources per acre is calculated by using the survey results for the Proposed Project. This resource density per acre is then applied to the foreseeable projects within the geographic scope as way of calculating the number of resources that potentially exist prior to development and may be destroyed due to future construction of the area.

4.4.5.1 Geographic Scope

Cumulative impacts to cultural resources are site-specific and projects within 1 mile is appropriate for this analysis. This geographic scope of analysis is appropriate because the historic, archaeological, and built environment resources within this area are expected to be similar to those that occur on the Proposed Project site. Their proximity and similarity in environments would result in similar land-use, and thus, site types. Additionally, the amount of data readily available to conduct a cumulative analysis of a larger geographic area is limited. Scaling the cumulative analysis to within 1 mile of the Proposed Project, which totals 21,908 acres, allows for a more accurate projection of the average number of cultural resources per acre, based on the survey results for the Proposed Project.

Table 4.4-6. Cumulative Analysis Results: Estimated Number of Cultural Resources per Acre

Project Name	Acres	Estimated Number of Cultural Resources*
Ord Mountain Solar LLC	483	3
Calcite Solar I	664	4

Table 4.4-6. Cumulative Analysis Results: Estimated Number of Cultural Resources per Acre

Project Name	Acres	Estimated Number of Cultural Resources*
Monastery, P201700152	117	1

* Calculated by number of acres x 0.006

The results of this analysis suggest that reasonably foreseeable future projects could destroy approximately 6 percent of the 131 total cultural resources that are estimated to have originally existed in the cumulative analysis study area. This analysis does not take into account the variation in cultural resource types as well as the variation in significant values associated with the NRHP and CRHR-eligible resources in the cumulative study area.

4.4.5.2 Cumulative Impact Analysis

Impacts CUL-1 and CUL-2: The Project Could Cause a Substantial Adverse Change in Significance of a Historical or Archaeological Resource

Direct Effects. Based on the number of acres that would be disturbed by the Proposed Project (2,185 acres), direct impacts associated with the Proposed Project would contribute approximately 10 percent of the cumulative impacts within the cumulative analysis study area (21,908 acres) in San Bernardino County.

There are three known historical resources within the Proposed Project area. Although Proposed Project activities in combination with other projects in Lucerne Valley could contribute to the progressive loss of cultural resources, the implementation of the proposed mitigation measures would minimize the effects of the Proposed Project, reducing its contribution to the regional loss of eligible resources that could result from construction.

Indirect Effects. The cumulative scenario includes other large-scale solar projects with gen-tie lines whose scale and industrial character would contribute to adverse visual cumulative effects (see Section 4.1.5.2, *Aesthetics/Light and Glare*, Cumulative Effects). The setting in which a cultural resource is located in is taken into account when evaluating a resource's integrity. More often than not, setting is considered a contributing feature to the overall integrity of a significant resource. If all the projects in the cumulative scenario were built, the visual intrusion upon the setting of a resource eligible for the CRHR (Barstow Road or SR-247) would increase in severity. The Proposed Project's contribution to this indirect impact on eligible cultural resources would be considerable, due to the visual intrusion created by the Stagecoach Gen-tie Line and its two crossings of the road.

4.4.6 Mitigation Measure Summary

Table 4.4-7 presents the mitigation measures identified to reduce or avoid potentially significant impacts to cultural resources. Unless otherwise noted, these mitigation measures apply to impacts for the Stagecoach Facilities and the SCE Calcite Facilities.

Table 4.4-7. Impact and Mitigation Measure Summary for Cultural Resources

Impact	Mitigation Measures
Impact CUL-1: The Project could cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines, section 15064.5	**MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1b:** Prepare and Implement a Cultural Resources Monitoring Plan **MM CUL-1c:** Develop and Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Archaeological Monitoring **MM CUL-1e:** Unanticipated Discoveries **MM CUL-1f:** Monitoring Report **MM CUL-1g:** Avoidance of Environmentally Sensitive Area – *[Applies to SCE Calcite Facilities only]* **MM TCR-1a:** Tribal Monitoring **MM TCR-1b:** Treatment of Cultural Resources
Impact CUL-2: The Project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to State CEQA Guidelines, section 15064.5	**MM CUL-1a:** Retain a Cultural Resources Specialist **MM CUL-1b:** Prepare and Implement a Cultural Resources Monitoring Plan **MM CUL-1c:** Develop and Implement Cultural Resources Environmental Awareness Training **MM CUL-1d:** Archaeological Monitoring **MM CUL-1e:** Unanticipated Discoveries **MM CUL-1f:** Monitoring Report **MM TCR-1a**: Tribal Monitoring **MM TCR-1b:** Treatment of Cultural Resources
Impact CUL-3: The Project could disturb human remains, including those interred outside of formal cemeteries	**MM CUL-3:** Treatment of Human Remains

4.5 CULTURAL RESOURCES – TRIBAL

Assembly Bill (AB) 52 (Gatto), Chapter 532, Statutes of 2014, requires that the California Environmental Quality Act (CEQA) Lead agency send a formal notice and invitation to consult about a Proposed Project to all tribal representatives who have requested such notice. The purpose of this consultation is to obtain tribal information and direction related to the potential significant project effects on tribal cultural resources (TCRs) that may be affected by a project (as required by Pub. Resources Code, § 21080.3.1 subd. (d)). Consultation must include discussion of specific topics or concerns identified by tribes. This section describes the potential impacts of the Proposed Project related to Tribal cultural resources.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system

4.5.1 Environmental Setting

4.5.1.1 Prehistoric Setting

Prehistoric archaeological sites in California are places where Native Americans lived or carried out activities during the prehistoric period before Europeans arrived in 1769 A.D. These sites contain artifacts and subsistence remains, and they may contain human burials. Artifacts are objects made by people and include tools (such as projectile points, scrapers, and grinding implements), waste products from making stone tools (flakes and debitage), and nonutilitarian or decorative artifacts (beads, ornaments, ceremonial items, and rock art). Subsistence remains include the inedible portions of foods, such as animal bone and shell, and edible parts that were lost and not consumed, such as charred seeds.

Southern California's desert region has a long history of human occupation. Prehistoric material culture within this region has been organized according to periods or patterns that define technological, social, economic, and ideological elements. Within these periods, archaeologists have defined a chronology specific to the prehistory of the desert region, including the Project area.

The Mojave Desert region is divided into four major periods; Paleoindian Period, Lake Mojave Period, Pinto Period, and the Late Holocene which includes the Gypsum, Rose Springs, and Late Prehistoric complexes. Additionally, the Proposed Project is located within Serrano territory, historically. Please refer to Appendix F, Cultural Resources, for more details on the prehistory and history of the Proposed Project area.

4.5.1.2 Ethnographic Setting

The Proposed Project is located within Yuhaaviatam territory. Yuhaaviatam is the original Tribal name meaning "People of the Pines." The Tribe was subsequently known as the Serrano, which was the name given by the Spanish. Pertinent aspects of this overview, along with ethnographic information obtained primarily from Aspen (2020b) are presented below.

Serrano

The Serrano, or "mountaineers" in Spanish, occupied the territory of the San Bernardino Mountains east to Mount San Gorgonio, the San Gabriel Mountains west to Mount San Antonio, and portions of the desert to the north and the fringe of the San Bernardino Valley to the south. Numbering no more than perhaps 1,500 people, the Serrano were scattered over a rugged, expansive landscape. The Serrano were Shoshonean peoples, speakers of languages in the Takic sub-family of the larger Uto-Aztecan language family. Their most intensive cultural contacts were with the Pass Cahuilla, who occupied the territory to the southeast, and the Gabrielino, who occupied the lands westward to the Pacific coast.

The term "Serrano" is properly applied to just one of four original Serrano subgroups, the others being the Alliklik, Vanyume, and Kitanemuk; all were closely linked linguistically, but were not a tribe with a recognizable political unity. The Serrano subgroup occupied the portion of the San Bernardino Mountains and adjacent valleys that encompass the Project area, and thus this term refers here to the smaller cultural unit.

Serrano clans were politically autonomous, although linked by ceremonial ties to other clans and peoples of other Tribal groupings (i.e., the Cahuilla and Gabrielino). A moiety structure conditioned Serrano social life, all clans belonging to either the Coyote or Wildcat moiety, and all spring ceremonial and mourning obligations extending to at least one other clan. Exchanges of shell money between clans occurred during ceremonies, and contributions of shell money were made to mourning clan leaders by members of other clans on occasions of death. These moieties were exogamous, while clan organization

was both patrilineal and exogamous. Although some have suggested that the clans were totemic, Edward Gifford disagrees. Gifford attributes the patrilineal clan and moiety form of organization to links with southwestern tribes (Aspen 2020b); others would identify Serrano organization as a typically Shoshonean social structure.

Each Serrano clan had a hereditary leader, or *kika*, and an assistant who was a ceremonial leader, or *paha*. These individuals were central to the ritual life of the Serrano, providing leadership during yearly ceremonial periods. In the context of discussions concerning mourning ceremonies, William Strong indicates, “Immediately after death, much of the property of the deceased was destroyed,” and Lowell Bean and Charles Smith note that cremation was practiced concurrent with the destruction of most of the deceased’s possessions (Aspen 2020b).

During the early historic era, Serrano peoples and their culture were decimated by the Spanish mission system. San Gabriel Mission was established in 1771 in the Los Angeles area, and baptisms of Serrano individuals began by 1785. Much later, in 1819, a new mission was founded in the San Bernardino Valley at the Indian ranchería of Guachama. An irrigation ditch (the Mill Creek *Zanja*) was built with Serrano labor in 1819–1820, and agriculture became important in the valley.

In the late eighteenth century, the Mojave River formed portions of a major native travel and exchange corridor between the Colorado River and points east and the southern San Joaquin Valley and the Pacific Coast. The Vanyumé occupied the Mojave River portion of this corridor, while the Chemehuevi had settled the desert region to the east of the Sinks of the Mojave, and the Desert Kawaiisu ranged to the north of the Mojave River. Mojave traders from the Colorado River traveled via this corridor to the southern San Joaquin Valley and coastal Southern California to acquire shell beads and other items for exchange (Earle 2005). Marine shell beads, particularly those made from the *Olivella* shell, and abalone ornaments were obtained directly from the Chumash-speaking groups of coastal Southern California; shell beads imported from Chumash territory could also be obtained from the Yokuts of the southern San Joaquin Valley (Aspen 2020b).

Regarding the use of the Mojave River as a trade/travel corridor, Earle states that “The late eighteenth century political geography of this area appears to have reflected the importance of this travel corridor to long-distance exchange, and particularly to the exchange involving Pacific coast shell beads, which served as an important medium of exchange and which were circulated far to the east of desert California” (Aspen 2020b).

Ethnohistorical information on the Mojave River area from the 1770s through the 1840s makes it clear that the Mojave River communities of the Vanyumé had developed long-standing political and social ties with the Mojave, and functioned as intermediaries in the longer distance trade networks maintained by the Mojave. The frequency of Mojave long-distance travel through the region created an unusual situation, as they often recognized sacred places that were located hundreds of miles to the west of their zone of settlement

and flood farming on the Colorado River. The Mojave traders negotiating the Mojave River route relied on the Vanyumé for sustenance and shelter along the trek, as they did not carry their own supplies. Gifts of shell beads and other goods were bestowed upon the Vanyumé as reciprocal exchanges for this hospitality, and cemented relationships between the two groups (Aspen 2020b).

4.5.1.3 Tribal Coordination

AB 52, which became effective on July 1, 2015, made several changes to CEQA regarding Tribal Cultural Resources and consultation with California Native American Tribes who have previously requested to be notified of projects in the geographic area traditionally and culturally affiliated with that Tribe. These provisions ensure Tribes have the opportunity to provide meaningful input on a project's potential effects on Tribal Cultural Resources and possible measures to avoid or minimize any significant effects.

Pursuant to Executive Orders B-10-11 and N-15-19 affirming that state policy requires and expects coordination with tribal governments in public decision making, the CSLC follows its 2016 Tribal Consultation Policy, which provides guidance and consistency for staff in its interactions with California Native American Tribes (CSLC 2016), including when the CSLC acts as a lead agency under CEQA. The Tribal Consultation Policy, which was developed in collaboration with tribes, other state agencies and departments, and the Governor's Tribal Advisor, recognizes that tribes have a connection to areas that may be affected by CSLC actions and "that these Tribes and their members have unique and valuable knowledge and practices for conserving and using these resources sustainably" (CSLC 2016).

Additionally, under AB 52, lead agencies must avoid damaging effects on tribal cultural resources, when feasible, whether consultation occurred or is required. The CSLC contacted the Native American Heritage Commission (NAHC), which maintains two databases to assist specialists in identifying cultural resources of concern to California Native Americans (Sacred Lands File and Native American Contacts). A request was sent to the NAHC for a sacred lands file search of the Project area and a list of Native American representatives who may be able to provide information about resources of concern located within or adjacent to the Project area.

The Native American Heritage Commission (NAHC) maintains two databases to assist cultural resources specialists in identifying cultural resources of concern to California Native Americans. CSLC staff contacted the NAHC to obtain information about known cultural and Tribal cultural resources and request a list of Native American Tribal representatives who may have geographic or cultural affiliation in the Proposed Project area. The NAHC responded on January 14, 2020, stating that the Sacred Lands File database did not include any previously identified sacred sites in the Proposed Project area. The NAHC also forwarded a list of Native American groups or individuals, which the CSLC used for outreach and coordination. In addition, one Tribe with geographic or cultural

affiliation in San Bernardino County submitted a written request to the CSLC for notification of CEQA projects pursuant to AB 52 (see generally, Pub. Resources Code, § 21080.3.1).

In August 2020, the CSLC sent project notification letters and an invitation to consult under AB 52 to the Director of Cultural Resources of the one tribe who had previously requested notification—the San Manuel Band of Mission Indians (SMBMI). The CSLC also notified the nine individuals identified on the NAHC contact list to ensure those tribes would have an opportunity to provide meaningful input on the potential for Tribal cultural resources to be found in the Proposed Project area and recommend steps to be taken to ensure adverse impacts to Tribal cultural resources are avoided. The outreach letters sent in August 2020 included chairpersons and representatives of the following:

- Kern Valley Indian Community
- Morongo Band of Mission Indians
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians
- Serrano Nation of Mission Indians
- Tubatulabals of Kern Valley

While there were no responses to the outreach letters, the CSLC received one response to the AB 52 consultation letter from SMBMI; the CSLC provided project and cultural resources survey information in response to this letter, and the SMBMI provided several recommended mitigation measures, pursuant to Public Resources Code section 21080.3.2, subdivision (a), and discussion of those recommendations have been included in consultation meetings held between the SMBMI and the CSLC. The SMBMI additionally provided information related to the types of Tribal cultural resources that may be present on the Project site, which are included below.

4.5.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Appendix A. The cultural resources policies defined in the County of San Bernardino's General Plan are summarized in Section 4.4, *Cultural Resources*. Additional policies related to Tribal cultural resources are presented below.

San Bernardino Countywide Plan: 2020 County Policy Plan

The 2020 County Policy Plan serves as the County's General Plan. The Plan presents the following goal and policies regarding tribal cultural resources:

Goal CR-1 Tribal Cultural Resources: Tribal cultural resources that are preserved and celebrated out of respect for Native American beliefs and traditions.

- ***Policy CR-1.1:*** *Tribal notification and coordination. We notify and coordinate with tribal representatives in accordance with state and federal laws to strengthen our working relationship with area tribes, avoid inadvertent discoveries of Native*

American archaeological sites and burials, assist with the treatment and disposition of inadvertent discoveries, and explore options of avoidance of cultural resources early in the planning process.

- ***Policy CR-1.2:*** *Tribal planning. We will collaborate with local tribes on countywide planning efforts and, as permitted or required, planning efforts initiated by local tribes.*
- ***Policy CR-1.3:*** *Mitigation and avoidance. We consult with local tribes to establish appropriate project-specific mitigation measures and resource-specific treatment of potential cultural resources. We require project applicants to design projects to avoid known Tribal cultural resources, whenever possible. If avoidance is not possible, we require appropriate mitigation to minimize project impacts on tribal cultural resources.*
- ***Policy CR-1.4:*** *Resource monitoring. We encourage coordination with and active participation by local tribes as monitors in surveys, testing, excavation, and grading phases of development projects with potential impacts on tribal resources*

4.5.3 Significance Criteria

The following significance criteria for Tribal cultural resources are derived from Appendix G of the State California Environmental Quality Act (CEQA) Guidelines. Impacts to Tribal cultural resources are considered significant if the Proposed Project would:

- Cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

  i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

  ii) A resource determined by the lead agency to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1, considering the significance of the resource to a California Native American tribe?

In making a finding that a resource is a Tribal cultural resource, the CSLC may consider, among other evidence, elder testimony, oral history, tribal archival information, testimony of an archaeologist or other expert certified by the tribe, official declarations or resolutions adopted by the tribe, formal statements by the tribe's historic preservation officer, or other historical notes and anthropological records (OPR 2017).

4.5.4 Environmental Impact Analysis and Mitigation

The impacts of the Stagecoach Solar Generation Plant are presented in Section 4.5.4.1, and the Stagecoach Gen-tie Line and SCE Calcite Facilities are analyzed in Sections 4.5.4.2 and 4.5.4.3, respectively. Note that Section 4.4, *Cultural Resources* defines all known historical resources, including archaeological resources that relate to tribal use of the Project area. Impact discussion and mitigation measures are presented in Section 4.4.4.

4.5.4.1 Impacts of the Stagecoach Solar Generation Plant

Impact TCR-1: Change the Significance of a Tribal Cultural Resource, as defined in Public Resources Code section 21074, that is either eligible for or listed in the California Register of Historical Resources or in a local register or is determined by the lead agency to be significant.

Inadvertent disturbance or destruction of a previously unidentified Tribal cultural resource could result in an adverse change to the significance of the resource. **(Less than Significant with Mitigation)**

Impact Discussion

Tribal cultural resources could include archaeological resources, including those defined in Section 4.4, as well as areas of spiritual significance or plant collection areas. These resources may include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. Tribal cultural resources may also include resources that are not scientifically significant, but still hold sacred or cultural value to a consulting Tribe.

Neither the record search nor the NAHC sacred lands file results indicated that areas of spiritual significance are known to exist within the Proposed Project area. However, during consultation with the SMBMI, the Tribal representative indicated that the project area is considered by the Tribe to have a high sensitivity for Tribal cultural resources, as follows:

- The Proposed Project area is located in traditional hunting grounds for bighorn sheep and pronghorn. Traditional hunting grounds constitute a landscape that is a Tribal cultural resource. Implementation of the project without mitigation measures could result in an adverse effect on this Tribal cultural resource.
- Several petroglyph sites, rock shelters, cairns, lithic scatters, hearths, *metates*, and stone tools exist throughout the valley, and a prehistoric ceramic pipe has been recovered previously. Potential disturbance of these items and the areas in which they exist is of utmost concern to the SMBMI, which necessitates additional subsurface testing and mitigation measures including avoidance, if feasible, or reburial.

While the above Tribal cultural resources are not eligible or listed on the CRHR, the CSLC staff determined them to be significant, based on the formal statements and testimony provided by the SMBMI Tribal Historic Preservation Officer, as provided in the Office of Planning and Research AB 52 Technical Advisory cited above. Therefore, impacts to Tribal cultural resources are *potentially significant*, because project activities could adversely affect the significance of these identified Tribal cultural resources.

Inadvertent disturbance or destruction of a presently unidentified Tribal cultural resource could result in damage or destruction of the Tribal cultural resource, which could result in a significant impact. Implementation of Mitigation Measures CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement a Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), CUL-1f (Monitoring Report; see full text in Section 4.4.4.1), and CUL-3 (Treatment of Human Remains) are recommended to ensure that impacts would be less than significant. In addition, MM TCR-1a (Tribal Monitoring) would ensure appropriate Tribal involvement in monitoring, and MM TCR-1b (Treatment of Cultural Remains) would ensure that appropriate actions are taken if pre-contact cultural resources are discovered during construction.

Mitigation Measures

MM TCR-1a: Tribal Monitoring. Due to the heightened cultural sensitivity of the proposed project area, Tribal monitors representing the San Manuel Band of Mission Indians shall be present for all ground-disturbing activities that occur within the proposed project area (which includes, but is not limited to, tree/shrub removal and planting, clearing/grubbing, grading, excavation, trenching, compaction, fence/gate removal and installation, drainage and irrigation removal and installation, hardscape installation [benches, signage, boulders, walls, seat walls, fountains, etc.], and archaeological work). A sufficient number of Tribal monitors shall be present each work day to ensure that simultaneously occurring ground disturbing activities receive thorough levels of monitoring coverage.

MM TCR-1b: Treatment of Cultural Resources. If a pre-contact cultural resource is discovered during archaeological testing or during construction, the discovery shall be properly recorded and then reburied *in situ.* The Cultural Resources Management Plan (defined in MM CUL-1b) shall include a research design developed by the Cultural Resources Specialist (CRS) that shall include a plan to evaluate the resource for significance under CEQA criteria. Representatives from the San Manuel Band of Mission Indians Cultural Resources Department, the CRS, and the CSLC shall confer regarding the research design, as well as any testing efforts needed to delineate the resource boundary.

Following the completion of evaluation efforts, all parties shall confer regarding the archaeological significance of the resource, its potential as a Tribal Cultural Resource (TCR), avoidance (or other appropriate treatment) of the discovered resource

If avoidance of any significant resource and/or TCR is not feasible and the removal of the resource is necessary to mitigate impacts, then a data recovery plan will be developed by the CRS in coordination with the SMBMI and CSLC. The data recovery plan will include a research design and a comprehensive discussion of sampling strategies, resource processing, analysis, and reporting protocols/obligations. Removal of any cultural resource(s) shall be conducted with the presence of a Tribal monitor representing the Tribe, unless otherwise decided by SMBMI. The data recovery plan must be reviewed and approved by the applicant, CSLC, and SMBMI prior to implementation, and all removed materials will be temporarily curated on-site.

It is the preference of SMBMI that removed cultural material be reburied as close to the original find location as possible. However, should reburial within/near the original find location during project implementation not be feasible, then a reburial location for future reburial shall be decided upon by SMBMI, the landowner, and the Lead Agency, and all finds shall be reburied within this location. Additionally, in this case, reburial shall not occur until all ground-disturbing activities associated with the project have been completed, all monitoring has ceased, all cataloguing and basic recordation of cultural resources have been completed, and a final monitoring report has been issued to Lead Agency, California Historical Resources Information System (CHRIS), and SMBMI. All reburials are subject to a reburial agreement that shall be developed between the landowner and SMBMI outlining the determined reburial process/location, and shall include measures and provisions to protect the reburial area from any future impacts (vis a vis project plans, conservation/preservation easements, etc.).

Should it occur that avoidance, preservation in place, and on-site reburial are not an option for treatment, the landowner shall relinquish all ownership and rights to this material and confer with SMBMI to identify an American Association of Museums (AAM)-accredited facility within the County that can accession the materials into their permanent collections and provide for the proper care of these objects in accordance with the 1993 CA Curation Guidelines. A curation agreement with an appropriate qualified repository shall be developed between the landowner and museum that legally and physically transfers the collections and associated records to the facility. This agreement shall stipulate the payment of fees necessary for permanent curation of the collections and associated records and the obligation of the Project developer/applicant to pay for those fees.

All draft records/reports containing the significance and treatment findings and data recovery results shall be prepared by the archaeologist and submitted to the Lead Agency and SMBMI for their review and comment. After approval from all parties, the

final reports and site/isolate records are to be submitted to the local CHRIS Information Center, the Lead Agency, and SMBMI.

MM CUL-1a: Retain a Cultural Resources Specialist (Section 4.4, *Cultural Resources*)

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan (Section 4.4, *Cultural Resources*)

MM CUL-1c: Develop and Implement a Cultural Resource Environmental Awareness Training (Section 4.4, *Cultural Resources*)

MM CUL-1d: Archaeological Monitoring (Section 4.4, *Cultural Resources*)

MM CUL-1e: Unanticipated Discoveries (Section 4.4, *Cultural Resources*)

MM CUL-1f: Monitoring Report (Section 4.4, *Cultural Resources*)

MM CUL-3: Treatment of Human Remains (Section 4.4, *Cultural Resources*)

4.5.4.2 Impacts of the Stagecoach Gen-tie Line

Impact TCR-1:	**Change the Significance of a Tribal Cultural Resource, as defined in Public Resources Code section 21074, that is either eligible for or listed in the California Register of Historical Resources or in a local register or is determined by the lead agency to be significant.**
Inadvertent disturbance or destruction of a presently unidentified Tribal cultural resource could result in an adverse change to the significance of the resource. **(Less than Significant with Mitigation)**	

Impact Discussion

Neither the record search nor the NAHC sacred lands file results indicated that areas of spiritual significance are known to exist within the Stagecoach Gen-tie Line right-of-way. However, during consultation with the SMBMI, the Tribal representative indicated that the area is considered by the Tribe to have a high sensitivity for Tribal cultural resources, as described above for the solar generation plant (Section 4.5.4.1). While the above Tribal cultural resources are not eligible or listed on the CRHR, the CSLC staff determined them to be significant, based on the formal statements and testimony provided by the SMBMI Tribal Historic Preservation Officer, as provided in the Office of Planning and Research AB 52 Technical Advisory cited above. Therefore, impacts of the Stagecoach Gen-tie Line to Tribal cultural resources are *potentially significant*, because project activities could adversely affect the significance of these identified Tribal cultural resources.

Mitigation Measures TCR-1a (Tribal Monitoring), TCR-1b (Treatment of Cultural Resources), CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and

Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement a Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), CUL-1f (Monitoring Report), and CUL-3 (Treatment of Human Remains) are recommended to ensure that impacts to unknown resources would be less than significant.

Mitigation Measures

MM TCR-1a: Tribal Monitoring

MM TCR-1b: Treatment of Cultural Resources

MM CUL-1a: Retain a Cultural Resources Specialist (Section 4.4, *Cultural Resources*)

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan (Section 4.4, *Cultural Resources*)

MM CUL-1c: Develop and Implement a Cultural Resource Environmental Awareness Training (Section 4.4, *Cultural Resources*)

MM CUL-1d: Archaeological Monitoring (Section 4.4, *Cultural Resources*)

MM CUL-1e: Unanticipated Discoveries (Section 4.4, *Cultural Resources*)

MM CUL-1f: Monitoring Report (Section 4.4, *Cultural Resources*)

MM CUL-3: Treatment of Human Remains (Section 4.4, *Cultural Resources*)

4.5.4.3 Impacts of the SCE Calcite Facilities

Impact TCR-1: Change the Significance of a Tribal Cultural Resource, as defined in Public Resources Code section 21074, that is either eligible for or listed in the California Register of Historical Resources or in a local register or is determined by the lead agency to be significant.

Inadvertent disturbance or destruction of a presently unidentified Tribal cultural resource could result in an adverse change to the significance of the. **(Less than Significant with Mitigation)**

Impact Discussion

Neither the record search nor the NAHC sacred lands file results indicated that areas of spiritual significance are known to exist within the land affected by the SCE Calcite Facilities. However, as described in Section 4.4.4.3, *Cultural Resources*, the intensive pedestrian surveys identified a prehistoric site that is considered eligible for the CRHR (3380-13). The site is located near the former northern shoreline of Pleistocene Lake Lucerne.

During consultation with the SMBMI, the Tribal representative indicated that the area is considered by the Tribe to have a high sensitivity for Tribal cultural resources, as described above for the solar generation plant (Section 4.5.4.1). While the Tribal cultural resources described therein are not eligible or listed on the CRHR, the CSLC staff determined them to be significant, based on the formal statements and testimony provided by the SMBMI Tribal Historic Preservation Officer, as provided in the Office of Planning and Research AB 52 Technical Advisory cited above. Therefore, impacts of the SCE Calcite Facilities to Tribal cultural resources are *potentially significant*, because project activities could adversely affect the significance of these identified Tribal cultural resources.

Mitigation Measures TCR-1a (Tribal Monitoring), TCR-1b (Treatment of Cultural Resources), CUL-1a (Retain a Cultural Resources Specialist), CUL-1b (Prepare and Implement a Cultural Resources Management Plan), CUL-1c (Develop and Implement a Cultural Resources Environmental Awareness Training), CUL-1d (Archaeological Monitoring), CUL-1e (Unanticipated Discoveries), and CUL-1f (Monitoring Report), and CUL-3 (Treatment of Human Remains) are recommended to ensure that impacts to currently unknown resources would be less than significant.

In addition, MM CUL-1g (Avoidance of Environmentally Sensitive Area) is required in order to protect site 3380-13, which is located in the vicinity of the SCE Calcite Facilities.

Mitigation Measures

MM TCR-1a: Tribal Monitoring

MM TCR-1b: Treatment of Cultural Resources

MM CUL-1a: Retain a Cultural Resources Specialist (Section 4.4, *Cultural Resources*)

MM CUL-1b: Prepare and Implement a Cultural Resources Management Plan (Section 4.4, *Cultural Resources*)

MM CUL-1c: Develop and Implement a Cultural Resource Environmental Awareness Training (Section 4.4, *Cultural Resources*)

MM CUL-1d: Archaeological Monitoring (Section 4.4, *Cultural Resources*)

MM CUL-1e: Unanticipated Discoveries (Section 4.4, *Cultural Resources*)

MM CUL-1f: Monitoring Report (Section 4.4, *Cultural Resources*)

MM CUL-1g: Avoidance of Environmentally Sensitive Area (Section 4.4, *Cultural Resources*)

MM CUL-3: Treatment of Human Remains (Section 4.4, *Cultural Resources*)

4.5.5 Cumulative Impacts

As discussed in Section 3.0, *Cumulative Scenario*, information was collected on foreseeable projects in the vicinity of the Proposed Project that are in the planning stages, adopted, under construction, or completed. The section identifies projects whose impacts have the potential to combine with impacts of a similar nature resulting from the Proposed Project, thereby contributing to cumulative impacts. A radius of 10 miles was defined, since this captures any proposed development throughout Lucerne Valley. This includes both solar and non-solar development proposals. Please refer to Section 3.0, *Cumulative Scenario* for additional information.

4.5.5.1 Geographic Scope

Cumulative impacts to Tribal cultural resources are both site-specific and regional. While Tribal cultural resources within the Lucerne Valley area are expected to be similar to those that occur on the Proposed Project site, there has been a broader regional loss of Tribal cultural resources as a result of development, including from the solar projects listed in Table 3-3 (Section 3, *Cumulative Scenario*).

4.5.5.2 Cumulative Impact Analysis

With regard to Tribal cultural resources, cumulative impacts may occur if any project were to significantly impact the number and type of Tribal cultural resources within geographic area defined above. If the effects of the Proposed Project, taken together with the effects of other projects, result in a collective degradation of the resource base, then those impacts are considered cumulatively considerable.

Impact TCR-1: Change in Significance of a Tribal Cultural Resource

As discussed in Chapter 3.0, and Table 3-1, five reasonably foreseeable cumulative projects fall within the geographic scope considered for potential cumulative impacts related to Tribal cultural resources.

Of the projects listed in Table 3-1, three are solar projects located within Lucerne Valley. The other two projects consist of an approved SCE project (under construction) and modification of a nearby Monastery. The approved projects appear to be consistent with federal, state, and local policies and regulations pertaining to Tribal cultural resources which can include historical resources, archaeological resources, and burials, and their approvals incorporate typical mitigation measures for protection of Tribal cultural resources.

Direct cumulative impacts to Tribal cultural resources include the cumulative and permanent loss of known and as-yet-undiscovered significant resources. Implementation of mitigation measures for Impact TCR-1 in Section 4.5.4.1 would effectively reduce the contribution of the Project to cumulative effects. As a result, the Proposed Project would not make a cumulatively considerable contribution to significant cumulative impacts.

4.5.6 Mitigation Measure Summary

Table 4.5-1 summarizes the mitigation measures identified in this EIR to reduce or avoid potentially significant impacts related to Tribal cultural resources. These mitigation measures apply to impacts for the Stagecoach Facilities and the SCE Calcite Facilities.

Table 4.5-1. Impact and Mitigation Measure Summary

Impact	Mitigation Measures
Impact TCR-1: Change the Significance of a Tribal Cultural Resource, as defined in Pub. Resources Code, section 21074, that is either eligible for or listed in the California Register of Historical Resources or in a local register or is determined by the lead agency to be significant	**MM TCR-1a**: Tribal Monitoring **MM TCR-1b**: Treatment of Cultural Resources **MM CUL-1a:** Retain a Cultural Resources Specialist (Section 4.4, *Cultural Resources*) **MM CUL-1b:** Prepare and Implement a Cultural Resources Monitoring Plan (Section 4.4, *Cultural Resources*) **MM CUL-1c:** Develop and Implement a Cultural Resources Environmental Awareness Training (Section 4.4, *Cultural Resources*) **MM CUL-1d:** Archaeological Monitoring (Section 4.4, *Cultural Resources*) **MM CUL-1e:** Unanticipated Discoveries (Section 4.4, *Cultural Resources*) **MM CUL-1f:** Monitoring Report (Section 4.4, *Cultural Resources*) **MM CUL-1g:** Avoidance of Environmentally Sensitive Area **MM CUL-3: Treatment of Human Remains** (Section 4.4, *Cultural Resources*)

4.6 ENERGY

This section describes the potential impacts of the Proposed Project related to energy, and identifies measures to avoid or substantially lessen any impacts found to be potentially significant.

The Proposed Project is described in detail in Section 2, *Project Description*. The Environmental Impact Report (EIR) analysis of the Proposed Project is presented in three parts. The first two parts comprise the **Stagecoach Facilities** proposed by Aurora Solar, LLC and the third part includes the **SCE Calcite Facilities,** proposed by Southern California Edison (SCE). The analysis components are:

- The **Stagecoach Solar Generation Plant,** which would include the solar arrays and collector lines, ancillary project facilities, and the battery energy storage system, all located within the 3,570 acres of State-owned school lands managed by the CSLC
- The **Stagecoach Gen-tie Line** (located on State-owned lands, leased land, and purchased private land), which would run approximately 9.1 miles, connecting the Stagecoach Solar Generation Plant to the proposed SCE Calcite Facilities and the SCE electrical transmission system
- The **SCE Calcite Facilities,** which would be constructed, owned, and operated by SCE and would include a substation (referred to as the **SCE Calcite Substation**), a connection to distribution-level electric power, access roads, telecommunications facilities, and new transmission structures to interconnect with the existing transmission system

4.6.1 Environmental Setting

4.6.1.1 Environmental Setting of the Stagecoach Solar Generation Plant and Stagecoach Gen-tie Line

The proposed solar generation plant would provide up to 200 megawatts (MW) of renewable energy generating capacity.

4.6.1.2 Environmental Setting of the SCE Calcite Facilities

Renewable energy produced by the Stagecoach Facilities would be delivered to California's transmission grid at the proposed SCE Calcite Facilities. The southern California bulk electric power transmission system includes the high-voltage transmission facilities of SCE and San Diego Gas & Electric (SDG&E), with major interconnections to systems of Pacific Gas & Electric (PG&E), Los Angeles Department of Water and Power (LADWP), and Arizona Public Service (APS). About 15 million people in central, coastal and southern California, excluding the City of Los Angeles and certain other cities, are served by the SCE transmission system (CAISO 2021).

4.6.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Appendix A. Major state and local energy-related programs are summarized here.

Energy Action Plan and Loading Order

California has mandated and implemented aggressive energy-use reduction programs for electricity and other resources. In 2003, California's first Energy Action Plan established a high-level, coherent approach to meeting California's electricity and natural gas needs and set forth the "loading order" to address California's future energy needs. The "loading order" established that the State, in meeting its energy needs, would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply (CPUC 2008b). Since that time, the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) have overseen the plans, policies, and programs for prioritizing the preferred resources, including energy efficiency and renewable energy.

Senate Bill 100

On September 10, 2018, SB 100 (De León), Chapter 312, Statutes of 2018, was passed, making California the second state in the nation with a deadline to move to 100 percent zero-carbon electricity. SB 100 will accelerate California's renewable portfolio standard (RPS) requirements of electricity utility providers to 50 percent renewable energy sources by 2025. Sixty percent of the renewable energy sources from utilities are required to be provided by 2030, and the remaining 40 percent by 2045.

State CEQA Guidelines

The California Natural Resources Agency adopted certain amendments to the State California Environmental Quality Act (CEQA) Guidelines,[16] effective in 2019, to change how CEQA Lead Agencies consider the environmental impacts of energy use. The State CEQA Guidelines, section 15126.2, subdivision (b), requires analysis of a project's energy use, in order to ensure that energy implications are considered in project decisions. CEQA requires a discussion of the potential environmental effects of energy resources used by projects, with particular emphasis on avoiding or reducing the "wasteful, inefficient, and unnecessary consumption of energy" (see Pub. Resources Code, § 21100, subd. (b)(3)).

Local policies are summarized below.

San Bernardino Countywide Plan: 2020 County Policy Plan

The 2020 County Policy Plan serves as the County's General Plan. Provisions relevant to energy are the following:

[16] The "State CEQA Guidelines" refers to California Code of Regulations, Title 14, Chapter 3.

- ***Policy IU-5.1 Electricity and natural gas service.*** *We partner with other public agencies and providers to improve the availability and stability of electricity and natural gas service in unincorporated communities.*
- ***Policy IU-5.4 Electric transmission lines.*** *We support the maintenance of existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in southern California.*
- ***Policy IU-5.5 Energy and fuel facilities.*** *We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.*
- ***Policy NR-1.8 Construction and operations.*** *We invest in County facilities and fleet vehicles to improve energy efficiency and reduce emissions. We encourage County contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.*
- ***Policy NR-1.9 Building design and upgrades.*** *We use the CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixtures that improve environmental sustainability and reduce emissions.*

San Bernardino County Renewable Energy and Conservation Element (RECE)

- *The County General Plan includes the RECE that establishes policies generally prohibiting "utility-oriented" renewable energy project development on sites under County jurisdiction if they would adversely impact "the quality of life or economic development opportunities in existing unincorporated communities" (RE Policy 4.10)*

4.6.3 Significance Criteria

The following significance criteria for population and housing are derived from Appendix G of the State California Environmental Quality Act (CEQA) Guidelines. Impacts related to energy are considered significant if the Proposed Project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation and maintenance (O&M)
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency

4.6.4 Environmental Impact Analysis and Mitigation

The analysis of energy includes evaluating the Proposed Project's use of energy during construction and operation, as well as evaluating the Proposed Project's consistency with State or local plans for renewable energy or energy efficiency.

All construction- and operation-related activities would involve use of energy-consuming equipment and processes. This analysis presents a qualitative discussion of the Proposed Project's energy use for all phases and components. As set forth in the State CEQA Guidelines, Appendix F: Energy Conservation, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption
- Decreasing reliance on fossil fuels such as coal, natural gas, and oil
- Increasing reliance on renewable energy sources

Lead agency actions that are consistent with these goals would not be likely to cause an energy-related impact. The energy impact analysis emphasizes avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy resources, and whether the Proposed Project would result in a potentially significant environmental impact due to inefficient, wasteful, and unnecessary consumption of energy.

Examples of energy conservation measures that may be relevant to addressing energy are provided in Appendix F: Energy Conservation, within the State CEQA Guidelines.

The impacts of the Stagecoach Solar Generation Plant are presented in Section 4.6.4.1, and the Stagecoach Gen-tie Line and SCE Calcite Facilities are analyzed in Sections 4.6.4.2 and 4.6.4.3, respectively.

4.6.4.1 Impacts of the Stagecoach Solar Generation Plant

Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation and maintenance.

The Proposed Project would increase the availability of electricity from renewable resources, and energy use during construction and O&M would not be wasteful, inefficient, or unnecessary. **(Less than Significant)**

Impact Discussion

Construction. Construction activity associated with the Stagecoach Solar Generation Plant would require the consumption of fossil fuel resources, for example diesel fuel and gasoline to power construction equipment and vehicles. Additionally, construction would require the manufacture and delivery of new equipment and materials, which would require energy use. Based on their composition, some of the equipment and materials used during

construction and ultimately removed during decommissioning would be salvageable and recyclable.

The use of fuels for equipment and motor vehicles during construction would be necessary to install the facilities. The total energy requirements during construction are not quantified within the Project Description (Section 2). However, the volumes of motor gasoline and diesel fuel to be used can be approximated by reviewing the products of combustion of these fuels because the quantities of greenhouse gases emitted are directly proportional to the volumes of fuels used. Based on the anticipated quantities of carbon dioxide emissions (described in Section 4.8, *Greenhouse Gas Emissions*), approximately 2.1 million gallons of diesel fuel would need to be used over the entire 18-month construction duration. To put this volume into perspective, data from the CEC indicates that California's refineries normally produce around 2.1 million barrels of diesel each week (CEC 2021) or roughly 12.6 million gallons each day with a barrel being equal to 42 gallons. This means the total diesel fuel volume used during overall construction of the Proposed Project (2.1 million gallons) would represent about 17 percent of California's routine diesel production volume in one typical day (12.6 million gallons).

Energy use during construction would be reduced by best management practices to minimize unnecessary construction equipment activity and by mitigation measures (MMs) presented in Sections 4.2, *Air Quality*, and 4.17, *Traffic and Transportation*. These measures include limiting the idling of equipment, encouraging carpooling, and traffic management planning that would reduce temporary traffic delays. These efforts would help to ensure the efficient use of fuels during construction.

While construction would require the short-term use of energy resources, the Proposed Project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources. Accordingly, the impact of energy resource consumption by the Proposed Project during construction of the Stagecoach Solar Generation Plant would be less than significant.

Operation and Maintenance. The Proposed Project would increase the amount of renewable energy electrical power generated and delivered into SCE's portion of California's transmission grid to serve electricity demand. Maintenance and inspection of the Stagecoach Facilities would require use of some fossil fuel resources, by up to 10 employees for ongoing facility maintenance and repairs. The permanent O&M staff would also be available on call for off-site monitoring of the site. With few workers needed for O&M, the limited use of fossil fuel by operational workers' commute trips and the use of vehicles or equipment during maintenance is not considered to be wasteful, inefficient, or unnecessary.

The Proposed Project would increase the availability of electricity from renewable resources for end-users, thus reducing the use of fossil fuel by conventional power plants that generate electricity. The limited use of some non-renewable energy resources for O&M of the

Proposed Project would not be wasteful, inefficient, or unnecessary in light of providing an increased supply of renewable energy. The Proposed Project would result in a less than significant impact with respect to the direct or indirect energy consumption or use of energy resources.

Mitigation Measures

No mitigation would be required, but energy use would be further reduced with implementation of MM AQ-1b (Control On-Site Off-Road Equipment Emissions) and MM TRA-1 (Construction Traffic Control Plan).

Impact EN-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

The Proposed Project would increase the availability of renewable energy and would not conflict with a State plan for prioritizing preferred resources, including energy efficiency and renewable energy. However, it would conflict with the County Renewable Energy and Conservation Element. **(Significant and Unavoidable)**

Impact Discussion

Construction. There are no plans or policies that relate specifically to construction use of energy.

Operation and Maintenance. The proposed solar generation plant would provide up to 200 MW of renewable energy generating capacity. The objectives of the Proposed Project include assisting with achieving California's renewable energy generation goals under SB 100 and SB 350 (De León, Chapter 547, Statutes of 2015), as well as greenhouse gas (GHG) emissions reduction goals of the California Global Warming Solutions Act (AB 32, Nunez, Chapter 448, Statutes of 2006). The Proposed Project would directly support federal and State plans and policies, and it would not conflict with State plans and policies that prioritize the preferred resources, including energy efficiency and renewable energy.

The County of San Bernardino County Policy Plan includes the RECE, which expresses a preference to "Keep utility-oriented projects separate from or sufficiently buffered from existing communities, to avoid adverse impacts on community development and quality of life." The Stagecoach Solar Generation Plant is proposed on State-owned land, and the County designation would not prohibit development. However, the Project would be in conflict with the County RECE with respect to the location of the solar generation plant. There is no mitigation for this inconsistency, so the impact is significant and unavoidable.

Mitigation Measures

No mitigation is available for an inconsistency with County land use plans.

4.6.4.2 Impacts of the Stagecoach Gen-tie Line

Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation and maintenance.
The Stagecoach Gen-tie Line would contribute to an increase in the availability of electricity from renewable resources, and energy use during construction and O&M would not be wasteful, inefficient, or unnecessary. **(Less than Significant)**

Impact Discussion

Construction. Construction activity associated with the Stagecoach Gen-tie Line would require similar consumption of fossil fuel resources as used for the Stagecoach Solar Generation Plant (see Section 4.6.4.1). Energy use during construction would be reduced by best management practices to minimize unnecessary construction equipment activity and by mitigation measures presented in Sections 4.2, *Air Quality*, and 4.17, *Traffic and Transportation*. These measures include limiting the idling of equipment, encouraging carpooling, and traffic management planning that would reduce temporary traffic delays. These efforts would help to ensure the efficient use of fuels during construction.

While construction of the gen-tie line would require the short-term use of energy resources, it would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The impact of energy resource consumption by the Proposed Project during construction would be less than significant.

Operation and Maintenance. The Stagecoach Gen-tie Line is a component of the Proposed Project, which would increase the amount of renewable energy electrical power generated and delivered into SCE's portion of California's transmission grid to serve electricity demand. Maintenance and inspection of the gen-tie line would require use of some fossil fuel resources for periodic inspection and maintenance. With no regular staffing for gen-tie line O&M, there would be little use of fossil fuel for workers' commute trips and the use of vehicles or equipment during maintenance is not considered to be wasteful, inefficient, or unnecessary.

Mitigation Measures

No mitigation would be required, but energy use during construction of the Stagecoach Gen-tie Line would be further reduced with implementation of MM AQ-1b (Control On-Site Off-Road Equipment Emissions) and MM TRA-1 (Construction Traffic Control Plan).

Impact EN-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

The Stagecoach Gen-tie Line would contribute to an increase the availability of renewable energy and would not conflict with a State plan for prioritizing preferred resources, including energy efficiency and renewable energy. However, it would conflict with the County Renewable Energy and Conservation Element. **(Significant and Unavoidable)**

Impact Discussion

Construction. There are no plans or policies that relate specifically to construction use of energy.

Operation and Maintenance. The Stagecoach Gen-tie Line would be consistent with State plans for renewable energy and energy efficiency. However, the Stagecoach Gen-tie Line, as a component of the Stagecoach Facilities, would be in conflict with the County RECE. There is no mitigation for this inconsistency, so the impact is significant and unavoidable.

Mitigation Measures

No mitigation is available for an inconsistency with County land use plans.

4.6.4.3 Impacts of the SCE Calcite Facilities

Impact EN-1: Wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation and maintenance.

The SCE Calcite Facilities would increase the availability of electricity from renewable resources, and energy use during construction and O&M would not be wasteful, inefficient, or unnecessary. **(Less than Significant)**

Impact Discussion

Construction. Construction activity associated with the SCE Calcite Facilities would require similar consumption of fossil fuel resources as used for the Stagecoach Facilities (see Section 4.6.4.1). Energy use during construction would be reduced by best management practices to minimize unnecessary construction equipment activity and by mitigation measures presented in Sections 4.2, *Air Quality*, and 4.17, *Traffic and Transportation*. These measures include limiting the idling of equipment, encouraging carpooling, and traffic management planning that would reduce temporary traffic delays. These efforts would help to ensure the efficient use of fuels during construction.

While construction of the gen-tie line would require the short-term use of energy resources, it would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

The impact of energy resource consumption during construction of the SCE Calcite Facilities would be less than significant.

Operation and Maintenance. The SCE Calcite Facilities would allow interconnection of the Stagecoach Solar Generation Plant to the regional electric grid, increasing the amount of renewable energy electrical power delivered into SCE's portion of California's transmission grid to serve electricity demand. Maintenance and inspection of the SCE Calcite Facilities would require use of some fossil fuel resources for periodic inspection and maintenance. With no regular staffing for SCE Calcite Substation, there would be little use of fossil fuel for workers' commute trips and the use of vehicles or equipment during maintenance is not considered to be wasteful, inefficient, or unnecessary.

Mitigation Measures

No mitigation would be required, but energy use during construction of the SCE Calcite Facilities would be further reduced with implementation of MM AQ-1b (Control On-Site Off-Road Equipment Emissions) and MM TRA-1 (Construction Traffic Control Plan).

Impact EN-2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

The SCE Calcite Facilities would contribute to an increase the availability of renewable energy and would not conflict with a State plan for prioritizing preferred resources, including energy efficiency and renewable energy. However, these facilities would conflict with the County Renewable Energy and Conservation Element. **(Significant and Unavoidable)**

Impact Discussion

Construction. There are no plans or policies that relate specifically to construction use of energy.

Operation and Maintenance. The SCE Calcite Facilities would be consistent with State plans for renewable energy or energy efficiency. However, these facilities, due to their purpose to interconnect solar power from the Stagecoach Solar Generation Plant, would be in conflict with the County RECE. There is no mitigation for this inconsistency, so the impact is significant and unavoidable.

Mitigation Measures

No mitigation is available for an inconsistency with County land use plans.

4.6.5 Cumulative Impacts

4.6.5.1 Geographic Scope

The geographic scope of the cumulative analysis for energy use would include all cumulative projects. This geographic area was selected because all cumulative projects have the potential to temporarily or permanently utilize energy resources or have the potential to conflict with plans and policies related to increasing renewable energy and energy efficiency.

4.6.5.2 Cumulative Impact Analysis

Impact EN-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources

Energy use during Proposed Project construction would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. The limited use of fossil fuel by operational worker commutes and use of vehicles and equipment during O&M would be only in amounts required to complete required tasks. The Proposed Project would increase the availability of renewable energy, thus reducing the use of fossil fuels for electrical generation by conventional power plants.

Three projects defined in Table 3-1, Section 3.0, *Cumulative Scenario*, are proposed solar generation facilities. While construction activities associated with these projects would require the use of fossil fuels, it is assumed each project would initiate best management practices as part of project approval to reduce wasteful, inefficient, or unnecessary use of energy resources.

The Proposed Project's contribution to cumulative impacts would be less than significant because the Proposed Project would not result in wasteful, inefficient, or unnecessary energy use.

Impact EN-2: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

The Proposed Project would be consistent with State plans encouraging renewable energy, so it would have a beneficial cumulative contribution related to directly increasing the availability of renewable energy. The Proposed Project would be in conflict with the County's RECE but is proposed on State-owned land.

4.6.6 Mitigation Measure Summary

No mitigation would be required.