

APPENDIX 4

Adopted Mitigation Measures

Introduction

The table that follows presents a compilation of Applicant Proposed Measures (APM) and Mitigation Measures (MM) adopted in the Record of Decision (ROD) for the Soda Mountain Solar Project (Project). The purpose of the table is to provide a single comprehensive list of the measures that will be implemented to avoid or reduce impacts of the Soda Mountain Solar Project on the human environment, the timing for their implementation, and related monitoring and reporting requirements.

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Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Air Resources			
APM 1: The Applicant shall use periodic watering for short-term stabilization of disturbed areas to minimize visible fugitive dust emissions. Use of a water truck to maintain surface moisture on disturbed areas and surface application of water during visible dusting episodes shall be considered sufficient to maintain compliance.		All project phases	BLM
APM 2: The Applicant shall apply BMPs to prevent Project-related visible bulk materials transport (trackout) onto paved surfaces. BMPs may include, but not be limited to, the following: a. Use of wheel-washers (or equivalent) installed at all access points and laydown areas where trackout onto paved public roads could occur b. Construction of stabilized construction site entrance/exit areas c. Implementation of regular street sweeping/cleaning of paved surfaces d. Installation of corrugated steel panels at all site exits		Prior to and during construction	BLM
APM 3: The Applicant shall cover haul vehicles loaded with earthen materials while operating on publicly maintained paved surfaces.		During construction	BLM
APM 4: The Applicant shall stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 14 days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions.		During construction	BLM
APM 5: The Applicant shall clean up Project-related visible bulk materials transport (trackout) or spills on publicly maintained paved surfaces within 24 hours.		All project phases	BLM
APM 6: The Applicant shall discontinue non-essential earth-moving activities under high wind conditions when wind speeds exceed 25 miles per hour and those activities result in visible dust plumes. All grading activities shall be suspended when wind speeds are greater than 30 miles per hour.		During construction	BLM
APM 7: The Applicant shall limit the speed of vehicles traveling on unpaved roads and disturbed areas to 15 miles per hour.		All project phases	BLM
APM 8: The Applicant shall apply water to all unpaved roads and unpaved parking areas actively used during construction, except when moisture remains in the soils such that dust is not produced when driving on unpaved roads.		During construction	BLM
APM 9: The Applicant shall use off-road construction diesel engines that meet the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines unless such engine is unavailable for a particular item of equipment. If a Tier 3 engine is unavailable, that engine shall be equipped with retrofit controls providing nitrogen oxides and particulate matter emissions equivalent to a Tier 3 engine.		All project phases	BLM
APM 10: The Applicant shall apply Level 3 diesel particulate filters to diesel engines of off-road construction equipment.		During construction	BLM
Mitigation Measure 3.2-1: After construction and prior to the use of unpaved roads and parking areas, the Applicant shall apply BLM-approved dust palliatives to all unpaved roads and parking areas per manufacturer recommendations. Palliatives shall be reapplied every 2 years or as requested by the BLM per manufacturer recommendations. During operation and maintenance disturbed areas within the Project site that still produce visible dust plumes shall be watered twice daily or as needed.		Prior to and during operation and maintenance	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Air Resources (cont.)			
Mitigation Measure 3.2-2: During construction, vehicles and equipment shall not idle for more than 5 minutes if not performing construction activities. The use of idling vehicle air conditioner units to reduce the effects of heat shall be prohibited unless required for a medical emergency or to prevent a medical emergency when temperatures on the Project site exceed 100 °F.		During construction	BLM
Mitigation Measure 3.2-3: The Applicant shall discontinue non-essential earth-moving activities under high wind conditions (i.e., when wind speeds exceed gusts of 25 miles per hour or when sustained wind speeds exceed 15 miles per hour based on a 15-minute average as indicated by a wind instrument on-site and those activities result in visible dust plumes). All grading activities shall be suspended when wind gusts are greater than 30 miles per hour.		During construction	BLM
Mitigation Measure 3.2-4: The Applicant shall make a good faith effort to use 2007 and newer diesel haul trucks and use available construction equipment that meets the highest USEPA-certified tiered emission standards. An Exhaust Emissions Control Plan that identifies each off-road unit's certified tier specification, Best Available Control Technology (BACT), as well as the model year of all haul trucks to be used on the Project that are under direct control of the Applicant or its construction contractor shall be submitted to BLM and the County for review and approval at least 30 days prior to commencement of construction activities. Construction activities cannot commence until the plan has been approved. For all pieces of equipment that would not meet Tier 4 emission standards, the Exhaust Emissions Control Plan shall include documentation from two local heavy construction equipment rental companies that indicates that the companies do not have access to higher-tiered equipment for the given class of equipment. In the event that 2007 or newer diesel haul trucks are not available for the Project, the Exhaust Emissions Control Plan shall document that a good faith effort to obtain such haul trucks has been made.		Submit plan at least 30 days prior to commencement of construction Implement plan during construction	BLM and San Bernardino County
Biological Resources – Vegetation			
APM 34: The site shall be revegetated after decommissioning according to the Final Closure Plan prepared in conformance with BLM requirements at the time of decommissioning.		After decommissioning	BLM
APM 35: Preconstruction Surveys for Rare or Special-Status Plant Species and Cacti. Before construction of a given phase begins, the Applicant will stake and flag the construction area boundaries, including the construction areas for the solar arrays and associated infrastructure; construction laydown, parking, and work areas; and the boundaries of all temporary and permanent access roads. A BLM-approved biologist will then survey all areas of proposed ground disturbance for rare or special-status plant species and cacti during the appropriate period (blooming or otherwise identifiable) for those species having the potential to occur in the construction areas. All rare or special-status plant species and cacti observed will be flagged for transplantation.		Prior to construction	BLM
APM 36: Vegetation Resources Management Plan. The Applicant will prepare and implement a Vegetation Resources Management Plan that contains the following components: a) Vegetation Salvage plans that discuss the methods that will be used to transplant cacti present within the proposed disturbance areas following BLM's standard operating procedures, as well as methods that will be used to transplant special-status plant species that occur within proposed disturbance areas. b) Restoration plans discussing the methods that will be used to restore any of the four native plant community types (creosote bush-white bursage scrub, cheesebush scrub, creosote bush scrub, and smoke tree woodland) present within the Project right-of-way that may be temporarily disturbed by construction activities. The Applicant would obtain BLM approval for any seed mix used for restoration. c) Vegetation Salvage and Restoration plans that will specify success criteria and performance standards. The Applicant will be responsible for implementing the VRMP according to BLM requirements.		Submit plan at least 30 days prior to commencement of construction Implement plan during and following construction	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>APM 37: Mitigate Direct Impacts to Rare or Special-Status Plants. To the extent feasible, the Project will be designed to avoid impacts to the Emory’s crucifixion-thorn population within the project ROW. No construction shall be allowed within a 100-foot buffer area around the Emory’s crucifixion-thorn population. All other California Rare Plant Rank (CRPR) 1 and 2 plant occurrences within the Project ROW will be documented during preconstruction surveys. The Applicant will also provide a 100-foot buffer area surrounding each avoided occurrence, in which no construction activities will take place, if feasible. If avoidance is not feasible, the Applicant will provide on-site mitigation (e.g., vegetation salvage) for impacts to rare plants.</p>		Prior to and during construction	BLM
<p>APM 38: Herbicides shall not be applied systemically over the entire project area. Herbicides shall be applied in focused treatments in areas where invasive weed infestations have been identified, such as where there is a clump or monotypic stand of invasive weeds. Herbicides shall not be applied within 100 feet of a special-status plant or Emory’s crucifixion thorn.</p>		All project phases	BLM
<p>APM 39: Only a State of California and federally certified contractor (i.e., Qualified Applicator), who is also approved by BLM, and holds and maintains a Qualified Applicator License from California Department of Pesticide Regulation, will be permitted to perform herbicide applications. Herbicides will be applied in accordance with applicable laws, regulations, and permit stipulations. All herbicide applications must follow USEPA label instructions.</p>		All project phases	BLM
<p>APM 40: Herbicides shall not be applied during rain events, within 48 hours of a forecast rain event with a 50 percent or greater chance of precipitation or when wind velocity exceeds 10 miles per hour (mph) (for liquids) and 15 mph for granular herbicides.</p>		All project phases	BLM
<p>APM 50: The Applicant will implement an Integrated Weed Management Plan to control weed infestations and the spread of noxious weeds on the Project site.</p>		Submit plan at least 30 days prior to commencement of construction Implement plan during all project phases	BLM
<p>Mitigation Measure 3.3-1: Designated Biologist. The Applicant shall assign at least one Designated Biologist to the Project. The Applicant shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the BLM Authorized Officer (AO) for approval in consultation with CDFW and USFWS.</p> <p>The Designated Biologist must meet the following minimum qualifications:</p> <ol style="list-style-type: none"> 1. Bachelor’s degree in biological sciences, zoology, botany, ecology, or a closely related field; 2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; 3. Have at least one year of field experience with biological resources found in or near the Project site; 4. Meet the current USFWS Authorized Biologist qualifications criteria (www.fws.gov/ventura/speciesinfo/protocols_guidelines), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; 5. Possess a CESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise. <p>In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the BLM AO, in consultation with CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the mitigation measures.</p>		Prior to construction	BLM in consultation with CDFW and USFWS

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>Mitigation Measure 3.3-2: Vegetation Best Management Practices. The Applicant shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to vegetation resources:</p> <ol style="list-style-type: none"> <i>Limit Area of Disturbance.</i> The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas within the Project site. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles, and equipment shall be confined to the flagged areas. <i>Minimize Road Impacts.</i> New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction. <i>Minimize Traffic Impacts.</i> Vehicular traffic during Project construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. <i>Monitor During Construction.</i> In areas that have not been fenced with desert tortoise exclusion fencing and cleared, a Designated Biologist shall be present at the construction site during all Project construction activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall review areas immediately ahead of equipment during brushing and grading activities. <i>Minimize Impacts of Staging Areas.</i> Staging areas for construction on the plant site shall be within the area that has been fenced with desert tortoise exclusion fencing. For construction activities outside of the solar plant site, access roads, pulling sites, and storage and parking areas shall be designed, utilized, and maintained with the goal of avoiding or minimizing impacts to native plant communities and sensitive biological resources. Staging areas outside of the plant site shall maintain a minimal disturbance footprint, avoid jurisdictional wetlands, and avoid disturbance to native plant communities whenever possible. <i>Avoid Use of Toxic Substances.</i> Soil bonding and weighting agents used on unpaved surfaces (per Mitigation Measure 3.2-1) shall be non-toxic to plants and wildlife. <i>Implement Erosion Control Measures.</i> All erosion control measures promoted by the Lahontan RWQCB in its Project Guidelines for Erosion Control (Board Order No R6T-2003-0-04 Attachment G; Lahontan RWQCB, 2003) shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter “waters of the State.” Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into drainages. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential. To avoid impacts associated with generation of fugitive dust, surface application of water would be employed during construction and operation and maintenance activities. <i>Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization.</i> If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife. 		<p>Item 1: Prior to and during construction Item 2: Prior to and during construction Item 3: All project phases Item 4: During construction Item 5: During construction Item 6: All project phases Item 7: All project phases Item 8: Prior to construction Item 9: Submit plan at least 30 days prior to commencement of ground-disturbing activities. Implement plan during construction. Item 10: Submit plan at least 30 days prior to commencement of construction. Implement plan during all project phases.</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>9. <i>Revegetation of Temporarily Disturbed Areas.</i> The Applicant shall prepare and implement a Temporary Disturbance Revegetation Plan to restore all areas subject to temporary disturbance to pre-Project grade and conditions. The plan shall be submitted to the BLM for review and approval at least 30 days prior to the start of ground-disturbing activities. Temporarily disturbed areas within the Project site include, but are not limited to: all proposed locations for linear facilities, temporary access roads, berms, areas surrounding the drainage diffusers, construction work temporary lay-down areas not converted to part of the solar field, and construction equipment staging areas. The Temporary Disturbance Revegetation Plan shall include a description of topsoil salvage and seeding techniques and a monitoring and reporting plan, and plan to achieve the following performance standards by the end of monitoring year 2:</p> <ul style="list-style-type: none"> a. at least 80 percent of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and b. relative cover and density of plant species within the temporarily disturbed areas shall equal at least 60 percent relative to pre-disturbance conditions. <p>10. <i>Integrated Weed Management Plan.</i> This measure provides further detail and clarifies requirements for the Applicant's draft Integrated Weed Management Plan (IWMP) (see Appendix E-2). Prior to beginning construction on the Project, the Applicant shall prepare, circulate to the BLM for comment and approval, and then implement an IWMP that meets the approval of BLM's Authorized Officer and conforms to the CDCA Plan (Table 1) to prevent the spread of existing invasive species and the introduction of new invasive species to the Project site. The Plan shall be consistent with BLM's Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and the National Invasive Species Management Plan (National Invasive Species Council, 2008).</p> <p>The IWMP shall include, at a minimum: specific management objectives and measures for each target invasive species; baseline conditions; weed risk assessment; measures (both preventative and containment/control) to prevent/limit the introduction and spread of invasive species; monitoring and surveying methods; and reporting requirements.</p> <p>The BLM-approved IWMP shall include:</p> <ul style="list-style-type: none"> a. Preventative measures to prevent the spread of weeds into new habitats, such as equipment inspections, use of weed-free erosion control materials and soils, and a mandatory site training element that includes weed management; b. Weed containment and control measures such as the removal of invasive species primarily via mechanical means, with the use of herbicides restricted to BLM-policies and approved usage (e.g., BLM's <i>Herbicide Use Standard Operating Procedures</i> provided in Appendix B of the Record of Decision for the <i>Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement</i> (BLM, 2007); c. Monitoring and reporting standards annually during construction and for three years following the completion of construction to describe trend in weed distribution and direct weed management measures, and; d. Reporting of monitoring and management efforts in annual reports and a final monitoring report completed at the end of three years of post-construction monitoring. Copies of these reports will be provided to the BLM for review and comment. The BLM will use the results of these reports to determine if any additional monitoring or control measures are necessary. Weed control will be ongoing on the Project site for the life of the Project, but plan success will be determined by the BLM after the three years of operations monitoring through the reporting and review process. Success criteria will be defined as having no more than 10 percent increase in a weed species or in overall weed cover in any part of the Project site. 			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>Mitigation Measure 3.3-3: Special-Status Plant Species and Cacti Impact Avoidance and Minimization. This measure will avoid unintended impacts to special-status plants on the Project site (e.g., Emory's crucifixion thorn) and provide for the salvage of protected cacti prior to construction. This measure includes the following requirements:</p> <ol style="list-style-type: none"> 1. The Applicant shall establish Environmentally Sensitive Areas around Emory's crucifixion thorn plants and smoke trees that have been identified on the Project site (Figure 3.3-3) and/or may be identified in Project disturbance areas during site preparation. A minimum 100-foot exclusion area shall be established around the plants, which shall be clearly identified and maintained throughout construction to ensure that avoided plants are not inadvertently harmed. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages or compensatory mitigation. 2. <i>Worker Environmental Awareness Program (WEAP).</i> The WEAP (APM 44; Mitigation Measure 3.4-1c) shall include training components specific to protection of special-status plants that occur on the Project site. 3. <i>Herbicide and Soil Stabilizer Drift Control Measures.</i> Special-status plant occurrences within 100 feet of the Project Disturbance Area, including Utah vine milkweed, shall be protected from herbicide and soil stabilizer drift. The IWMP (APM 50 and Mitigation Measure 3.3-2) includes measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's The Global Invasive Species Team (Hillmer and Liedtke, 2003), the USEPA, and the Pesticide Action Network Database.¹ 4. <i>Erosion and Sediment Control Measures.</i> Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non-Mojave Desert native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan (Mitigation Measure 3.19-2). 5. <i>Preconstruction Vegetation Salvage.</i> The Applicant has provided a draft <i>Vegetation Resources Management Plan</i> (Appendix L) that details the methods for the salvage and transplantation of target succulent species covered under the California Desert Native Plants Act. The Applicant shall implement a plan substantially similar to the draft provided, that shall be revised to include the salvage and transplantation of the six (6) palo verde trees and the single western honey mesquite that would be affected by the Project. The revised plan shall be submitted to the BLM AO for review and approval at least 30 days prior to the start of ground-disturbing activities and shall include at a minimum the following elements: <ol style="list-style-type: none"> a. Soil baseline characterization. The characterization shall be presented to the BLM AO prior to ground disturbance and shall include: <ol style="list-style-type: none"> i. Profile description of three representative pedons. (A pedon is the smallest three-dimensional sampling unit displaying the full range of characteristics of a particular soil and typically occupies an area ranging from about 1 to 10 square yards); ii. Characterization of surface application (desert pavement or biological soil crust present). Description of biological soil crust shall include major groups of organisms identified at the site (filamentous cyanobacteria, other cyanobacteria, mosses, lichens, liverworts) and the characteristics by which they were identified (see item b, below); iii. Documentation of soil macro-invertebrates (that is, presence of ants, termites, and other significant macro-invertebrates); iv. Soil texture (percent sand, silt, and clay), along with a reference to a widely accepted method for making the determination; 		Prior to and during construction	BLM

¹ Available at: <http://www.pesticideinfo.org>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Biological Resources – Vegetation (cont.)</p> <p>v. Bulk density, along with a reference to a generally accepted method for making the determination;</p> <p>vi. Fertility (nutrient status, electrical conductivity, sodium adsorption ratio), along with methods by which composite samples were collected and the laboratory methods used to determine these properties. Composite samples shall contain equal contributions from at least six randomly located collection points within the soil donor area; and</p> <p>vii. Organic matter content and total carbon and nitrogen content, along with a reference to generally accepted methods for making the determinations.</p> <p>Soil compaction shall be determined by measurement of bulk density in grams per cubic centimeter (g/cc) (or numerically equivalent units). Bulk density may be determined by any of several standard measurements, but the method used must be referenced to a widely accepted soil methodology publication. In no case shall soil be compacted to bulk density that exceeds 1.6 g/cc except where no planting is to take place. Penetrometer measurements are not a substitute for bulk density measurements.</p> <p>Once characterized, the top 3 inches of topsoil shall be salvaged from the areas where traditional grading will be used per the following protocol, and stored within the Project site. The upper 0.25 inch may be collected separately to preserve biological crust organisms. Topsoil may not be distinguishable from subsoils by color or organic content at the time of salvage, but is characterized as the layer that contains fine roots during the active growing season. Soil shall be collected, transported, and formed into stockpiles only while the soil is dry. The vegetation in place at or immediately before topsoil collection shall be healthy native vegetation with less than 15 percent absolute cover of exotic weed growth. Soil occupied by vegetation of high plant diversity shall be given priority over soil occupied by low diversity native vegetation. Soil may be collected with a front loader, bulldozer, or scraper and transported to storage areas by front loader, dump truck, or scraper. The equipment transporting the soil may not travel across the stockpile more than the minimum number of times required to build the soil to its intended depth. The depth of the stockpiles shall not exceed 4 feet in the case of sandy loam or loamy sand soils. Topsoil stockpiles shall be kept dry and covered if no vegetation is introduced. If native vegetation is grown on the stockpiles to increase seeds and soil organisms, no cover is required. Artificial watering may be provided at the Applicant's option.</p> <p>Stockpiled topsoil shall be used to grow native plant species for the purpose of producing native seeds and building beneficial microorganisms in the soil volume. All native plant species encountered in the vegetation surveys shall be included in the growing rotation on the stockpiles. Most growing space needs to be dedicated to the species for which the most seeds shall be required. At least half by area of the growing area during each growing cycle shall be dedicated to plant species known to be good mycorrhizal host plants. Members of the families Chenopodiaceae and Amaranthaceae should be limited to less than half the area of the soil stockpiles, with the other half occupied by known mycorrhizal host plant species.</p> <p>b. Biological Soil Crust Characterization and Preservation. Biological soil crust is defined here as a mixture of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts, and fungi. Biological soil crust shall be preserved by collecting the upper 0.25 inch of topsoil from areas to be graded. The Applicant and/or its contractor(s) shall collect from specific areas known to contain biological crust organisms or collect upper soil from the entire area to be graded. Collections shall emphasize filamentous cyanobacteria; but other cyanobacteria, mosses, lichens, and liverworts are also considered valuable contributors to biological soil crust and important in protecting against erosion and reducing weed invasion, and shall be collected as a secondary priority. Soil surface crust shall be air dried and stored dry in a shaded location in containers that allow air movement, such as loose-weave fabric bags. In no case may the stored crust be subject to wetting or direct sunlight during storage. All containers shall be clearly labeled with date and location of original collection; name and contact information of persons responsible for identifying suitable material to collect; and the persons who collected, stored, and maintained collections.</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>Biological soil crust shall be re-applied at the time of replanting by crumbling the stored material and broadcasting it on the surface of the soil. Approximately 10 percent of the stored material shall be broadcast on topsoil storage areas among plants being grown for seed and soil microorganisms. When the growing cycle progresses to new planting, the soil supporting biological crust shall be collected and stored by the same methods prescribed for collections from the original soil, in clearly labeled bags or other suitable containers.</p> <p>c. Succulent Transplant. The majority of the succulent plants located in areas to be dragged, rolled or spot graded, or above mowing height shall be salvaged and transplanted into a nursery area. The Succulent Transplant portion of the Vegetation Resources Management Plan shall include, at a minimum:</p> <ul style="list-style-type: none"> i. The location of target plants on the Project site; ii. Criteria for determining which individual plants are appropriate for salvage; iii. The proposed methods for salvage, propagation, transport, and planting; iv. Procedures for identifying target species during preconstruction clearance surveys; v. Considerations for storing salvaged plants or pre-planting requirements; and vi. Suggested transplantation sites. <p>Succulents to be transplanted into the nursery area shall be placed in their same compass orientation as they were in their original location. The salvaged plants also shall be kept in long-term soil stockpiles, along with natives grown on the stockpiles, to keep the soil biota fresh.</p> <p>Succulent transplants done during preparation of the Project site shall be fully documented and serve as trials of methods to be used during plant salvage on the Project site. Records shall be maintained for each transplanted specimen including species; height; number of branches or pads as appropriate; donor location by UTM coordinates; methods used to remove, transport, and store the plant; period of temporary storage; location; facility description; planting medium used for storage; and frequency of watering during storage. Records shall be kept at the time of planting at the storage area, and quarterly thereafter during storage until such time as each plant is placed in the field, or dies. Transplanted individuals shall be maintained for 3 years, including removal of invasive species and irrigation (if necessary), as well as monitored for 3 years to determine the percentage of surviving plants each year and to adjust maintenance activities using an adaptive management approach.</p> <p>d. Seed Collection. Seed collection shall be carried out within the ROW grant area and within 10 miles of the boundaries of the Project site on similar terrain, soil, exposure, slope and elevation to the project site. Seed collection guidelines shall conform to all laws and regulations in effect at the time of collection. Seed collection shall include all plant species known to be removed from the facility. If insufficient seeds are provided by “seed farming” and collection within 10 miles of the site, BLM may approve collection from a greater distance provided other environmental factors at the collection site are good matches to the Project site. Collected seed may be used to seed salvaged topsoil piles during the construction phase and after decommissioning related to restoring the Project site.</p> <p>e. If the palo verde or western honey mesquite trees on the site meet the CDFW size criterion for replacement (i.e., at least one stem greater than 2 inches in diameter) and cannot be salvaged based on the professional opinion of a qualified biologist/horticulturalist, then three (3) replacement plants shall be planted in or near the project site for each affected trees, and monitored following the above guidance.</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>Mitigation Measure 3.3-4: Impacts to State Waters. The Applicant shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the State and to satisfy requirements of California Fish and Game Code Sections 1600 and 1607.</p> <ol style="list-style-type: none"> 1. <i>Acquire Off-Site State Waters:</i> The Applicant shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 498.68 acres of state jurisdictional waters, or comparable area based on actual project impacts to ephemeral dry wash jurisdictional features (depending upon the selected project alternative and direct project impacts) that meets CDFW mitigation ratios (e.g., 1:1 for no net loss). Mitigation for impacts to state waters shall occur as close to the Project site as possible. If security is posted in accordance with Provision 2 below (<i>Security for Implementation of Mitigation</i>), the Applicant shall acquire the land, in fee or in easement, no more than 18 months after the start of Project ground-disturbing activities. Subject to BLM and CDFW review and approval, if after making a good faith effort to identify compensatory mitigation lands for acquisition as described in this measure, the Applicant determines that adequate lands are not available in proximity to the Project site, enhancement of state jurisdictional waters on public lands may be implemented in lieu of or in combination with land acquisition, provided that the total acreage of state jurisdictional waters acquired or enhanced is equal to the amount that meets CDFW mitigation ratios based on actual project impacts. 2. <i>Security for Implementation of Mitigation:</i> The Applicant shall provide financial assurances to the BLM AO and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account, a performance bond, or Security prior to initiating ground-disturbing project activities. Prior to submittal to the BLM AO, the Security shall be approved by the BLM AO, in consultation with CDFW and the USFWS, to ensure funding. Lands may concurrently be used to satisfy the requirements for desert tortoise habitat conservation (see Mitigation Measure 3.4-2d, <i>Desert Tortoise Compensatory Mitigation</i> in Section 3.4, <i>Wildlife</i>). The final mitigation acreage is also subject to CDFW concurrence with project impacts to waters of the State that were developed by the Applicant. 3. <i>Preparation of Management Plan:</i> The Applicant shall submit to the BLM AO and CDFW a draft Management Plan that reflects site-specific enhancement measures for the drainages on the compensation and/or enhancement lands. The objective of the Management Plan shall be to enhance the natural values of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control. 4. <i>Jurisdictional Waters Best Management Practices:</i> The Applicant shall also comply with the following conditions to protect drainages in and near the Project site: <ol style="list-style-type: none"> a. The Applicant shall minimize road building, construction activities, and vegetation clearing within ephemeral drainages to the extent feasible. b. The Applicant shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows. c. Spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages. d. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the State. These materials, placed within or where they may enter a drainage by the Applicant or any party working under contract or with the permission of the Applicant, shall be removed immediately. 		<p>Item 1: No more than 18 months after the start of ground disturbance</p> <p>Item 2: Prior to start of ground disturbance</p> <p>Item 3: Submit plan no more than 30 days after parcel(s) in Item 1 identified for acquisition</p>	<p>CDFW</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Vegetation (cont.)			
<p>e. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the State.</p> <p>f. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.</p>			
<p>Mitigation Measure 3.3-5: Final Closure Plan. At least 12 months prior to Project closure, the Applicant shall prepare a Final Closure Plan to restore the site’s topography and hydrology to a relatively natural condition and to establish native plant communities within the Project site. The Final Closure Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall cover the estimated cost as if BLM were to contract with a third party to decommission the Project and reclaim the Project site. The plan shall be subject to review and revisions from the BLM AO in consultation with USFWS and CDFW.</p>		At least 12 months prior to Project closure and start of decommissioning	BLM, USFWS, and CDFW
Biological Resources – Wildlife			
<p>APM 18: If, as described in APM 17, the recalibrated model predicts outflow from the northeast outlet of the Valley reduced by an amount in excess of 50 AFY, the Applicant will hire a professional hydrogeologist or geologist to develop a groundwater monitoring plan for submittal to and acceptance of BLM and San Bernardino County. The groundwater monitoring plan would include monitoring and quarterly reporting of groundwater levels within the Soda Mountain Valley, in the alluvial aquifer adjacent to Soda Spring and west of Soda Lake, and at Soda Spring during construction of the project. If the Project is shown to cause a decline in groundwater levels of 5 feet or more in the alluvial aquifer near Soda Spring, or there is a decrease in groundwater discharge at Soda Spring as a result of project groundwater withdrawal that results in the water level in the spring decreasing to less than 4 feet deep, which would threaten the tui chub, an evaluation would be conducted to determine if the Project is causing reduced groundwater discharge at Soda Spring. If it is determined that the Project has caused a decrease in the volume of groundwater discharged at Soda Spring such that the spring is less than 4 feet deep, thereby threatening the tui chub habitat, then the Project shall correspondingly curtail withdrawal of groundwater and import a corresponding amount of water from outside of the Soda Mountain Valley.</p> <p>Groundwater level measurements in the monitoring wells located in Soda Mountain Valley would be compared to the model predictions on an annual basis during construction and every 5 years during Project operation. The groundwater model would be recalibrated if the measured drawdown values in the monitoring wells exceed the predicted values by more than 15 percent. Monitoring would cease after 5 years of operational monitoring if two conditions are met:</p> <ol style="list-style-type: none"> 1. The monitoring data support the model predictions. 2. The model predicts the reduction in outflow from the northeast outlet will be less than 50 AFY under proposed project conditions, as detailed in APM 17. 		Prior to construction, and during construction, operation, and maintenance	BLM and San Bernardino County
<p>APM 44: The Applicant will implement a Worker Environmental Awareness Program (WEAP) to educate workers about the environmental issues associated with the Project and the mitigation measures that will be implemented at the site, including nest awareness and non-disturbance exclusion zones.</p>		During all Project phases	BLM
<p>APM 45: Burrowing owls occupying burrows on site will be passively relocated outside the nesting season or after a qualified biologist determines that the burrow does not contain eggs or chicks and after consultation with CDFW. Prior to construction and passive relocation, artificial burrows will be installed in areas that would not be disturbed during construction at a ratio of 5:1 for each burrow that will be destroyed by project construction. Passive relocation will be conducted prior to construction and according to the Burrowing Owl Consortium Guidelines (CBOC, 1993).</p>		Prior to construction	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)															
<p>APM 46: Pre-construction clearance surveys to identify active bird nests will be conducted within 2 weeks of ground disturbance or vegetation removal in all active work areas during the breeding season (February 1 through August 31). The work area will need to be resurveyed following periods of inactivity of 2 weeks or more. Active nests will be avoided using non-disturbance buffer zones as shown below.</p> <table border="1" data-bbox="267 465 1364 975"> <thead> <tr> <th colspan="3" data-bbox="267 465 1364 520">Avian Awareness and Baseline Non-Disturbance Buffer Zones</th> </tr> <tr> <th data-bbox="267 520 459 606">Type</th> <th data-bbox="459 520 982 606">Starting Distance of Awareness or Non-Disturbance Exclusion Zones</th> <th data-bbox="982 520 1364 606">Implementation Notes</th> </tr> </thead> <tbody> <tr> <td data-bbox="267 606 459 661">Passerines</td> <td data-bbox="459 606 982 661">300 feet from active nest</td> <td data-bbox="982 606 1364 975" rowspan="4">A qualified biologist may reduce or increase the buffer distance if there is sufficient evidence based on species, habitat, and other factors, that Applicant activity would not impact nesting activity. Buffers would be maintained until a qualified biologist has determined that the nest is no longer active.</td> </tr> <tr> <td data-bbox="267 661 459 715">Raptors</td> <td data-bbox="459 661 982 715">500 feet from active nest</td> </tr> <tr> <td data-bbox="267 715 459 770">Golden Eagles</td> <td data-bbox="459 715 982 770">1 mile and line of sight from active nest</td> </tr> <tr> <td data-bbox="267 770 459 975">Burrowing Owls¹</td> <td data-bbox="459 770 982 975">250 feet from active burrows during nesting season (February 1 through August 31) 160 feet from active burrows during the wintering period (September 1 through January 31)</td> </tr> </tbody> </table> <p>NOTE: ¹ Described in CBOC, 1993</p>	Avian Awareness and Baseline Non-Disturbance Buffer Zones			Type	Starting Distance of Awareness or Non-Disturbance Exclusion Zones	Implementation Notes	Passerines	300 feet from active nest	A qualified biologist may reduce or increase the buffer distance if there is sufficient evidence based on species, habitat, and other factors, that Applicant activity would not impact nesting activity. Buffers would be maintained until a qualified biologist has determined that the nest is no longer active.	Raptors	500 feet from active nest	Golden Eagles	1 mile and line of sight from active nest	Burrowing Owls ¹	250 feet from active burrows during nesting season (February 1 through August 31) 160 feet from active burrows during the wintering period (September 1 through January 31)		Prior to construction	BLM
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<p>APM 47: Monitoring of any active nests within or adjacent to the work areas will be conducted until nestlings have fledged and dispersed. Ongoing breeding-season monitoring of work areas will be conducted throughout the duration of construction.</p> <p>Nest monitoring results will be recorded in a Nest Check Form. Typically a nest check will have a minimum duration of 30 minutes, but may be longer or shorter, or more frequent than one check per day, as determined by the Designated Biologist based on the type of construction activity (duration, equipment being used, potential for construction-related disturbance) and other factors related to assessment of nest disturbance (weather variations, pair behavior, nest stage, nest type, species, etc.). The Designated Biologist will record the construction activity occurring at the time of the nest check and note any work exclusion buffer in effect at the time of the nest check. Non-Project activities in the area should also be recorded (e.g., adjacent construction sites, roads, commercial/industrial activities, recreational use, etc.). The Designated Biologist will record any sign of disturbance to the active nest, including but not limited to parental alarm calls, agitated behavior, distraction displays, nest fleeing and returning, chicks falling out of the nest or chicks or eggs being predated as a result of parental abandonment of the nest.</p> <p>Should the Designated Biologist determine project activities are causing or contributing to nest disturbance that might lead to nest failure, the Designated Biologist will coordinate with the Construction Manager to limit the duration or location of work, and/or set other limits related to use of project vehicles, and/or heavy equipment. Nest locations, Project activities in the vicinity of nests, and any adjustments to buffer areas will be described and reported in regular monitoring and compliance reports.</p>		During construction	CDFW															
<p>APM 48: Preconstruction surveys for burrows containing suitable bat roosting habitat that could be used as individual bat roosts will be conducted in all Project work areas.</p>		Prior to construction	BLM															

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
APM 49: The connection from the substation to the transmission line will be designed to meet the most recent APLIC guidelines to the extent practicable.		Prior to construction	BLM
APM 50: The Applicant will implement an Integrated Weed Management Plan to control weed infestations and the spread of noxious weeds on the Project site.		During all Project phases	BLM
APM 51: Roads, power lines, fences, and other infrastructure associated with the Project will be minimized to reduce habitat loss. Fencing will use wildlife compatible design standards.		Project design and all Project phases	BLM
APM 52: Collector lines will be placed underground to reduce avian collisions.		During construction	BLM
APM 53: After Project construction, areas of temporary disturbance will be closed and the restoration measures in the Vegetation Resource Management Plan will be implemented.		Following completion of construction	BLM
APM 54: Federal and state measures for handling toxic substances will be followed to minimize danger from spills to water and wildlife resources. Facility operators shall maintain Hazardous Materials Spill Kits on site. Personnel will be trained to use the Hazardous Materials Spill Kits.		During all Project phases	BLM
APM 55: The Applicant will clear vegetation outside of the bird breeding season to the maximum extent practicable. Preconstruction avian clearance surveys will be conducted by a qualified biologist for vegetation clearing during the bird breeding season (February 1 through August 31). If a nest(s) is identified in the preconstruction avian clearance surveys, a qualified monitor will be on site during vegetation removal in order to enforce non-disturbance buffers and stop activities as necessary should construction disturb nesting activity.		Prior to construction	BLM
APM 56: Trash will be disposed of in covered containers and regularly removed from the site.		During all Project phases	BLM
APM 57: Surveys for burrowing owl will be conducted in suitable burrowing owl habitat prior to construction and if construction is suspended for 2 weeks or more. The survey protocol will follow the Burrowing Owl Consortium Guidelines (CBOC, 1993). If active burrows are found they will be avoided using non-disturbance buffer zones, as described in the table included in APM 46. Passive relocation would be used as described above once the burrow is determined to be inactive.		Prior to construction	BLM
APM 58: A qualified biologist will conduct a golden eagle clearance survey for a 4-mile area surrounding the project. Golden eagle clearance surveys will be conducted annually for each year of construction during the golden eagle nesting season. If active nests are found in the survey area, SMS will coordinate with BLM, USFWS, and CDFW to ensure that construction does not result in disturbance of the golden eagles.		Prior to and during construction	BLM
APM 59: Evaporation ponds will have 3:1 sloping sides to discourage wading birds from utilizing the ponds. A wire grid with visual deterrents, such as plastic colored ribbons, will be implemented to discourage birds and bats from landing on the ponds. The evaporation pond will be monitored for bird fatalities. Netting or other appropriate BMPs will be applied at the direction of the Designated Biologist and as approved by BLM, CDFW, and USFWS (as appropriate).	[[likely deletion, no evap ponds]]	During construction	BLM
APM 60: The Project will remove and dispose of road kill near the Project site to avoid attracting raptors and other scavengers to the site, and will regularly remove vegetation around larger facilities (such as the substation) to reduce raptor foraging.		During all Project phases	BLM
APM 61: The Project will minimize the use of lighting that could attract migrating birds and bats (that could feed on concentrations of insects at lights). Lighting will be kept to the minimum level necessary for safety and security. High intensity, steady burning, bright lights such as sodium vapor or spotlights will not be used on project facilities.		During all Project phases	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
APM 62: Project personnel and visitors will be instructed to drive at low speeds (<15 mph) and be alert for wildlife, especially in low-visibility conditions.		During all Project phases	BLM
APM 63: Decommissioning methods will minimize new site disturbance and removal of native vegetation.		During decommissioning	BLM
APM 64: Foundations will be removed to a minimum of 3 feet below surrounding grade during decommissioning, and covered with soil to allow adequate root penetration for native plants. Petroleum product leaks and chemical releases shall be remediated prior to completion of decommissioning.		During decommissioning	BLM
APM 65: Fencing will be removed at the completion of decommissioning.		After decommissioning	BLM
<p>APM 66: Desert tortoise exclusion fencing will be installed at the perimeter of project construction areas (i.e., solar array areas, project buildings, substation/switchyard, earthen berms, and along the edge of access roads and collector line corridors). The fence locations will be determined during final design and will enclose areas of project activity. The fenceline and a 30-foot-wide buffer will be surveyed for desert tortoise before construction of the fence and according to USFWS protocol. Tortoises found in the fenceline survey area or spotted within 50 meters of the fenceline survey area will be:</p> <ol style="list-style-type: none"> a. Assigned a USFWS identification number. b. Given a health assessment c. Fitted with a transmitter. Tortoises that are too small to accept a transmitter (i.e., no transmitter is available that is 10 percent or less of the tortoise's body weight) will be treated as a translocatee and held in situ. d. Moved into habitat adjacent to and outside the fenceline. The tortoise will be moved into an empty burrow if clearance of the fence area takes place outside the tortoise active season (i.e., from November to March and from June to August). <p>Any of the moved tortoises that return to the project site before completion of fence construction will be treated as a translocatee. Desert tortoises remaining outside the fenceline prior to completion of the fence will be deemed residents. The transmitter will be removed from the resident tortoise, and no further action will be taken for the resident tortoises. USFWS procedures will be followed to clear and handle the desert tortoises.</p>		Prior to construction	BLM
APM 67: The project site preconstruction clearance survey will be conducted during the desert tortoise active season (April through May and September through October) unless otherwise agreed to by USFWS and CDFW. The survey will be conducted according to USFWS protocol and preferably during early morning hours to increase the chance the juvenile tortoises are found, per the Guidelines. Any tortoise scat will be collected on each pass of a transect, per the Guidelines. USFWS procedures will be followed to clear and handle the desert tortoise.		Prior to construction	BLM
APM 68: The linear facilities preconstruction clearance survey(s) will be conducted at any time throughout the year. Linear facilities for this project will include the buried collector lines between arrays and connecting to the substation. Located desert tortoises will be undisturbed and allowed to clear the site without assistance or interference. Tortoises will be moved if necessary to reduce the potential for harm from construction activities, but will not be moved more than 500 meters in such a scenario. USFWS procedures will be followed to clear and handle the desert tortoise.		Prior to construction	BLM
APM 69: Data will be collected during clearance surveys as described in this section. The same data will be collected again on tortoises held in the interim in situ on the day that the tortoise is translocated from the project site. The data will include:		Prior to and during construction	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
a. Date b. Time c. Temperature (°C) d. Project Name e. Site type (project/recipient/control) f. Landowner (BLM) g. Permit/BO # h. Coverage # i. Field crew vendor j. Surveyor (first and last name) k. ID# l. MCL (mm) m. Sex n. UTM (Easting) o. UTM (Northing) p. Location (e.g., burrow) q. Transmitter manufacturer r. Transmitter serial # s. Transmitter frequency t. Transmitter install date u. Battery life (months) v. Status (alive/dead/lost)			
APM 70: Following installation of the desert tortoise exclusion fencing, the fencing shall be regularly inspected. Permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 72 hours between March 15 and October 31 and within 7 days between November 1 and March 14 of observing damage. Inspections of permanent site fencing shall occur while desert tortoise fencing is in place.		During all Project phases	BLM
APM 71: No construction, operations, or decommissioning activities shall occur in unfenced areas without an approved desert tortoise biologist present. These activities include the construction phase (construction, revegetation), decommissioning phase, and maintenance activities during the operations phase that require new surface disturbance. An adequate number of trained and experienced monitors must be present during all construction and decommissioning activities in unfenced areas, depending on the various construction tasks, locations, and season. A biologist shall be on site from March 15 through October 31 (active season) during ground-disturbing activities in areas outside the exclusion fencing, and shall be on-call from November 1 to March 14 (inactive season). The biologist shall check all construction areas immediately before construction activities begin. The biologist shall inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within desert tortoise habitat (i.e., outside the permanently fenced area), before the materials are moved, buried, or capped. Alternatively, such materials may be capped before storing outside the fenced area or placing on pipe racks.		During all Project phases	BLM
APM 72: A Raven Monitoring and Control Plan shall be prepared consistent with the most current USFWS-approved raven management guidelines. The purpose of the plan is to avoid any project-related increases in raven numbers during construction, operation, and decommissioning. The Raven Monitoring and Control Plan shall be submitted to BLM and CDFW for approval at least 30 days prior to the start of construction.		Prepare plan prior to construction Implement plan during all Project phases	BLM and CDFW
APM 73: Compensatory habitat mitigation shall be provided at a 1:1 ratio for impacts to suitable desert tortoise habitat during construction. A habitat compensation plan will be prepared to the approval of CDFW, USFWS, and BLM.		Prior to and during construction	BLM, CDFW, and USFWS
APM 74: No pets shall be allowed on site prior to or during construction, except kit fox scat detection dogs (with CDFW approval) used for preconstruction surveys.		Prior to and during construction	BLM and CDFW

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
<p>APM 75: Two water sources will be created to encourage bighorn sheep migration to the north of I-15. The water source location(s) shall be determined through coordination with CDFW and BLM. The water sources shall be maintained throughout the life of the Project.</p>		<p>Create water sources prior to start of operation</p> <p>Maintain during operation and decommissioning</p>	<p>BLM and CDFW</p>
<p>Mitigation Measure 3.4-1a: Compliance Monitoring by the Designated Biologist. Prior to ground-disturbing activities, an individual shall be designated and approved by the BLM and Resources Agencies (USFWS and CDFW, as appropriate) as a Designated Biologist (i.e., field contact representative). Designated Biologist qualifications are presented below.</p> <p>The Designated Biologist shall be employed for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required. Each successive Designated Biologist shall be approved by the BLM's Authorized Officer. The Designated Biologist shall have the authority to ensure compliance with all measures set forth in the Biological Opinion and CESA Section 2081 take authorization and with all mitigation measures included herein, and will be the primary agency contact for the implementation of these measures. The Designated Biologist will have the authority and responsibility to halt any project activities that are in violation of the terms of the Biological Opinion, Section 2081 take authorization, or Project mitigation measures. A list of responsibilities of the Designated Biologist is summarized below.</p> <p>To avoid and minimize effects to biological resources, the Designated Biologist shall:</p> <ol style="list-style-type: none"> 1. Notify the BLM's Authorized Officer and USFWS at least 14 calendar days before initiation of ground-disturbing activities. 2. Immediately notify the BLM's Authorized Officer in writing if the Applicant/Owner does not comply with any of the mitigation measures or terms of the Biological Opinion and/or the Section 2081 take authorization including, but not limited to, any actual or anticipated failure to implement such measures within the periods specified. 3. Ensure performance of daily compliance inspections during on-going construction as clearing, grubbing, and grading are completed, and submit a monthly compliance report to BLM's Authorized Officer until construction is complete. 		<p>Designate biologist prior to start of construction</p> <p>Qualifications and duties apply throughout compliance monitoring</p>	<p>BLM, CDFW, and USFWS</p>
<p>Mitigation Measure 3.4-1b: Biological Monitoring. Biological Monitor(s) shall be employed to assist the Designated Biologist in conducting pre-construction surveys and monitoring ground disturbance, grading, construction, decommissioning, and restoration activities. Additionally, biological monitoring shall be performed during any ground disturbance or grading activities that occur during operation and maintenance. The Biological Monitor(s) shall have sufficient education and field experience to understand resident wildlife species biology, have experience conducting desert tortoise, burrowing owl, kit fox, and badger field monitoring, and be able to identify these species and their sign (including active burrows). The Designated Biologist shall submit a resume, at least three (3) references, and contact information for each prospective Biological Monitor to the BLM, and the Wildlife Agencies for approval. To avoid and minimize effects to biological resources, the Biological Monitor(s) will assist the Designated Biologist with the following:</p> <ol style="list-style-type: none"> 1. Be present during construction activities that take place in suitable habitat for desert tortoise, burrowing owl, kit fox, badger, or other protected species to prevent or minimize harm or injury to these species. 2. Activities of the Biological Monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures; monitoring for desert tortoise, burrowing owl, kit fox, badger, and other protected species; halting construction activity in the area if an individual is found; and checking the staking/flagging of all disturbance areas to be sure that they are intact and that all construction activities are being kept within the staked/flagged limits. If a desert tortoise, burrowing owl, kit fox, badger, or other protected species is found within a work area, the Biological Monitor(s) shall immediately notify the Designated Biologist, who shall determine measures to be taken to ensure that the individual is not harmed. 		<p>During construction and decommissioning</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
<ol style="list-style-type: none"> 3. Inspect the Project area for any special-status wildlife species. 4. Ensure that potential habitats within the construction zone are not occupied by special-status species (e.g., potential burrows or nests are inspected). 5. In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat at least 200 feet from the limits of construction activities. 6. At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the Biological Monitor(s) will ensure that the construction crew slopes the ends of the excavation (3:1 slope), provides wildlife escape ramps, or completely and securely covers the excavation to prevent wildlife entry. 7. Inspect the site to help ensure trash and food-related waste is placed in closed-lid containers and to ensure that workers do not feed wildlife. Also inspect the work area each day to ensure that no microtrash (e.g., bolts, screws, etc.) is left behind. 			
<p>Mitigation Measure 3.4-1c: Worker Environmental Awareness Program (WEAP). Prior to Project initiation, the Designated Biologist shall develop and implement the WEAP (APM 44), which shall be available in English and Spanish. Wallet-sized cards summarizing the information shall be provided to all construction and operation and maintenance personnel. The WEAP shall include the following:</p> <ol style="list-style-type: none"> 1. An explanation of the sensitivity of the vegetation communities and special-status plant and wildlife species within and adjacent to work areas, and proper identification of these resources. 2. Biology and status of the desert tortoise, golden eagle, burrowing owl, other nesting birds, kit fox, and American badger and measures to reduce potential effects to these species. 3. Actions and reporting procedures to be used if desert tortoise, burrowing owl, other nesting birds, kit fox, or American badger are encountered. 4. An explanation of the function of flagging that designates authorized work areas. 5. Driving procedures and techniques to reduce mortality of wildlife on roads. 6. Discussion of 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. 7. The importance of avoiding the introduction of invasive weeds into the Project area and surrounding areas. 8. A discussion of general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures. 9. A review of mitigation requirements that are applicable to their work. 		<p>Develop program prior to start of construction</p> <p>Implement WEAP throughout all Project phases for new personnel</p>	BLM
<p>Mitigation Measure 3.4-1d: Speed Limits. Speed limits along all access roads outside of permanent desert tortoise fencing shall not exceed 15 miles per hour to minimize dust during construction activities. Speed limits within permanent desert tortoise fencing shall not exceed 25 miles per hour to minimize impacts during operations and maintenance. Nighttime vehicle traffic associated with Project activities shall be kept to a minimum volume and speed (maximum of 15 miles per hour) to prevent mortality of nocturnal wildlife species.</p>		During all Project phases	BLM
<p>Mitigation Measure 3.4-1e: Lighting Specifications to Minimize Bird and Bat Impacts. The Applicant/Owner shall minimize night lighting during construction by using shielded directional lighting that is pointed downward, thereby avoiding illumination to adjacent natural areas and the night sky.</p>		During construction	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
<p>Mitigation Measure 3.4-1f: Burrowing Owl Protection Measures. No more than 14 days prior to the start of construction, a pre-construction survey for burrowing owls in conformance with the CDFW <i>Staff Report on Burrowing Owl Mitigation</i> (CDFG, 2012) shall be completed within suitable habitat at every work area and within a 150-meter buffer zone of each work area. Work areas will be resurveyed following periods of inactivity of 2 weeks or more. The Applicant/Owner shall submit the results of the pre-construction survey to BLM's Authorized Officer and CDFW. The Applicant/Owner shall also submit evidence of conformance with federal and state regulations regarding the protection of the burrowing owl by demonstrating compliance with the following:</p> <ol style="list-style-type: none"> 1. Unless otherwise authorized by BLM and CDFW, no disturbance shall occur within 160 feet (50 meters) of occupied burrows during the non-breeding season (September 1 through January 31) or within 650 feet (200 meters) during the breeding season (February 1 through August 31). 2. Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31). In the event that an occupied burrow absolutely cannot be avoided (e.g., due to physical or safety constraints), passive relocation of owls may be implemented prior to construction activities only if a qualified biologist approved by BLM verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans (developed in accordance with BLM protocol for burrowing owls) by CDFW and receipt of formal written approval from BLM authorizing the eviction. A Burrowing Owl Mitigation and Monitoring Plan following the guidance in the CDFW's <i>Staff Report on Burrowing Owl Mitigation</i> (CDFG, 2012) shall be submitted to the BLM's Authorized Officer and CDFW for review and approval prior to passive relocation. 3. Unless otherwise authorized by BLM, a 650-foot buffer within which no activity will be permissible will be maintained between Project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at BLM's discretion and based upon monitoring evidence, until the young owls are foraging independently. 4. If accidental take (disturbance, injury, or death of owls) occurs, the Designated Biologist will be notified immediately. 5. Impacts to active burrowing owl territories shall be mitigated at a 1:1 ratio through a combination of off-site habitat compensation and/or off-site restoration of disturbed habitat capable of supporting this species. The acquisition of occupied habitat off-site shall be in an area where energy facilities would not pose a mortality risk. Acquisition of habitat shall be consistent with the CDFW's <i>Staff Report on Burrowing Owl Mitigation</i> (CDFG, 2012). The preserved habitat shall be occupied by burrowing owl and shall be of superior or similar habitat quality to the impacted areas in terms of soil features, extent of disturbance, habitat structure, and dominant species composition, as determined by a qualified ornithologist. The site shall be approved by BLM. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. The off-site area to be preserved can coincide with other off-site mitigation lands, with the approval of the BLM and CDFW. 		<p>Survey no more than 14 days prior to the start of construction and after any 2-week period of inactivity</p> <p>Compliance with measures during construction</p>	<p>BLM and CDFW</p>
<p>Mitigation Measure 3.4-1g: Bird and Bat Conservation Strategy (BBCS). The Applicant/Owner shall develop a BBCS to address Project impacts to special-status avian and bat species that shall be consistent with the <i>Region 8 Interim Guidelines for the Development of a Project-Specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities</i> (USFWS, 2010b). The Applicant/Owner shall submit the BBCS to the BLM and USFWS for review and approval prior to initiation of Project construction. The BBCS shall include an assessment of potential avian and bat impacts from lighting, noise, collision, electrocution, and ponds (including attraction of ravens), as applicable; measures to mitigate for the effects to birds; a description of general avoidance and minimization measures applicable during construction, operation and maintenance, and post-construction to include nest management and post-construction monitoring; a description of the reporting requirements and reporting schedule and duration; and the adaptive management strategy. A raven management element shall be included in the BBCS or provided separately that includes measures such as storage of garbage in raven-proof containers and installation of anti-nesting devices on structures where raven nests could be built.</p>		<p>Prepare BBCS prior to construction</p> <p>Implement measures during all Project phases</p>	<p>BLM and USFWS</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Biological Resources – Wildlife (cont.)			
<p>Mitigation Measure 3.4-1h: Avian Monitoring and Mitigation Program. An AMMP shall be initiated and approved by the BLM in consultation with CDFW and USFWS prior to construction and continue for at least five years following commercial operation (and longer if determined necessary and appropriate by the Designated Biologist). The AMMP shall prevent substantial adverse effects to special status species through implementation of the approach outlined in the post construction monitoring and adaptive management provisions of <i>Region 8 Interim Guidelines for the Development of a Project-specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities</i> (USFWS, 2010b), in conjunction with any measures required after consultation with USFWS and/or CDFW under the ESA, CESA, or BGEPA, if applicable. The Program shall use surveys and monitoring of on-site avian and bat use and behavior to document species composition and changes in avian and bat use over time. The purpose of the AMMP is to provide an adaptive management and decision-making framework for reviewing, characterizing, and responding to avian and bat monitoring results, and reducing long-term impacts on these taxa. The AMMP shall include the following components:</p> <ol style="list-style-type: none"> 1. A description of the baseline and ongoing avian and bat survey methods, including identification of onsite survey locations and seasonal survey considerations, and a description of acoustic bat monitoring methods. 2. Avian and bat mortality and injury monitoring that includes: <ol style="list-style-type: none"> a) Onsite monitoring of representative locations in the facility, at a level of effort that accounts for potential spatial bias and allows for the extrapolation of survey results to non-surveyed areas. The AMMP will provide a rationale justifying the proposed schedule of carcass searches. b) Low-visibility and high-wind weather event monitoring to document potential weather-related collision risks that may be associated increased risk of avian or bat collisions with project features, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events (40 miles per hour winds) are sustained for period of greater than 4 hours. The monitoring report shall include survey frequency, locations, and methods. c) Scavenger and searcher efficiency trials to document the extent to which avian or bat fatalities remain visible over time and can be detected, and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates. d) A description of statistical methods used to generate facility estimates of potential avian and bat impacts based on the number of detections during standardized searches during the monitoring season for which the cause of death can be determined. e) Field detection and mortality or injury identification, cause attribution, handling and reporting requirements. The AMMP shall include detailed specifications on data collection and provide a carcass collection protocol. 3. All post-construction monitoring studies included in the AMMP shall be conducted by a third party contractor for at least five years following commercial operation and approval of the AMMP by the BLM. At the end of the five-year period, the BLM shall determine whether the survey program shall be continued. 4. An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce levels of avian or bat mortality or injury attributable to Project operations and facilities. Such measures could potentially include efforts to make panels more visible to birds (e.g., white borders around panel edges, improved netting at water features, or the use of noise deterrents). <p><u>The adaptive management program shall include (i) reasonable measures for characterizing the extent and importance of detected mortality and injuries clearly attributable to the Project; (ii) potential measures that the Project owner could implement to adaptively respond to detected mortality and injuries attributable to the Project. Adaptive actions undertaken will be discussed and evaluated in survey reports. Any impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) with the level of avian or bat mortality or injury that is specifically and clearly attributable to the Project facilities; and (iii) Appropriate performance standards for mitigation of impacts to any species regulated by</u></p>	<p>Modification of the measure to further provide for performance measures in the AMMP.</p>	<p>Prepare AMMP prior to construction Implement program during construction and for at least five years following start of commercial operation, as determined by BLM</p>	<p>BLM, CDFW, and USFWS</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p><u>BGEPA, ESA, and CESA as well as mitigation measures that reduce or offset mortalities caused by the Project to a level that avoids a substantial, long-term reduction in the demographic viability of the local population of the species in question.</u></p>			
<p>Mitigation Measure 3.4-1i: American Badger and Desert Kit Fox Protection. To avoid direct impacts to American badger and desert kit fox, pre-construction surveys shall be conducted for these species concurrent with the desert tortoise surveys. Surveys shall be conducted as described below:</p> <ol style="list-style-type: none"> 1. Biological Monitors shall perform pre-construction surveys for badger and kit fox dens in the Project disturbance area, including a 20-foot swath beyond the disturbed area, utility corridors, and access roads. If dens are detected each den shall be classified as inactive, potentially active, or definitely active. 2. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox. 		<p>Survey prior to construction Implement measures prior to and during construction</p>	<p>BLM and CDFW</p>
<p>Biological Resources – Wildlife (cont.)</p>			
<ol style="list-style-type: none"> 3. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. 4. If no tracks are observed in the tracking medium or no photos of the target species are captured after three consecutive nights, the den shall be excavated and backfilled by hand. 5. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. 6. If an active natal den is detected on the site, the BLM Authorized Officer and CDFW shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around active natal dens. 7. The following measures are required to reduce the likelihood of distemper transmission: <ol style="list-style-type: none"> a. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval; b. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use; and c. Any documented kit fox mortality shall be reported to CDFW and the BLM Authorized Officer within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until CDFW determines if the collection of necropsy samples is justified. 			
<p>Mitigation Measure 3.4-2a: Desert Tortoise Protection. The Applicant/Owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS' 2009 <i>Desert Tortoise Field Manual</i> (USFWS, 2009e) or more current guidance provided by CDFW and USFWS. The Applicant/Owner shall also implement all terms and conditions described in the Biological Opinion to be prepared by USFWS. These measures include, but are not limited to, the following, subject to modification by the terms of incidental take authorizations issued by the USFWS and CDFW:</p> <ol style="list-style-type: none"> 1. Desert Tortoise Fencing along I-15. If required by the USFWS, to avoid increases in vehicle-related 		<p>Install fencing prior to construction Perform site clearance surveys after completion of fence installation Maintain fencing as needed throughout all Project phases</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>mortality from disruption of local movement patterns along the existing ephemeral wash systems, desert tortoise-proof fencing shall be installed along the existing freeway right-of-way fencing on both sides of I-15 for the entire east-west dimension of the Project site. The tortoise fencing shall be designed to direct tortoises to existing undercrossing to provide safe passage under the freeway, and shall be regularly inspected and maintained for the life of the Project.</p> <p>2. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, permanent desert tortoise exclusion fencing shall be installed along the permanent perimeter security fence and temporarily installed along road corridors during construction. The proposed alignments for the permanent perimeter fence and temporary fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and temporary fencing areas shall be conducted by the Designated Biologist(s) using techniques outlined in the USFWS' 2009 Desert Tortoise Field Manual and may be conducted in any season with USFWS and CDFW approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide</p>			
Biological Resources – Wildlife (cont.)			
<p>100 percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line covering an area approximately 90 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. All desert tortoise burrows and burrows constructed by other species that might be used by desert tortoises shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 <i>Desert Tortoise Field Manual</i>. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist in accordance with the USFWS' 2009 <i>Desert Tortoise Field Manual</i> (USFWS, 2009e).</p> <p>a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.</p> <p>b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS' 2009 <i>Desert Tortoise Field Manual</i> (Chapter 8 – Desert Tortoise Exclusion Fence).</p> <p>c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. Cattle grating designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry</p> <p>d. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing, the fencing shall be regularly inspected. If tortoise were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times a day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during or within 24 hours following all major rainfall events. Exceptions to inspections during major rainfall events may be made as needed to maintain crew safety. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the Project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All damaged temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.</p> <p>3. Desert Tortoise Clearance Surveys within Solar Arrays. Clearance surveys shall be conducted in accordance with the USFWS <i>Desert Tortoise Field Manual</i> (USFWS, 2009e) (Chapter 6 – Clearance</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100 percent the Project area by walking transects no more than 15 feet apart. If a desert tortoise is located during the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance surveys of the Project site may only be conducted when tortoises are most active (April through May or September through October) unless the Project receives approval from CDFW and USFWS. Clearance surveys of linear features may be conducted during any time of the year. Any tortoise located during clearance surveys of solar arrays shall be translocated or relocated and monitored in accordance with the Desert Tortoise Translocation Plan (DTTP; Mitigation Measure 3.4-2b).</p> <p>The Designated Biologist, who may be assisted by the Biological Monitors, shall assess occupancy of each burrow by desert tortoises in accordance with the USFWS <i>Desert Tortoise Field Manual</i> (USFWS, 2009e). All potential desert tortoise burrows located during clearance surveys shall be excavated by hand, tortoises removed, and burrows collapsed or blocked to prevent occupation by desert tortoises in accordance with the DTTP.</p>			
Biological Resources – Wildlife (cont.)			
<p>4. Monitoring Following Clearing. Following the desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the Project site to perform clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be on-site for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the DTTP.</p> <p>5. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled tortoise. Desert tortoise moved from within Project areas shall be marked and monitored in accordance with the DTTP. All collected data related to tortoise relocation will be provided to the BLM Authorized Officer.</p>			
<p>Mitigation Measure 3.4-2b: Desert Tortoise Translocation Plan. The Applicant/Owner shall develop and implement a USFWS-approved Desert Tortoise Translocation Plan (DTTP). The DTTP, which shall be approved prior to any ground disturbance or tortoise relocation, shall include measures to minimize the potential for repeated translocations of individual desert tortoises. The goals of the DTTP shall be to: relocate all desert tortoises from the Project site to nearby suitable habitat; minimize impacts on resident desert tortoises outside the Project site; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring. The DTTP shall follow the <i>Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance</i> (USFWS, 2011c) and shall clearly define how it addresses the 11 steps outlined in the guidance. The final DTTP shall be based on the draft DTTP prepared by the Applicant/Owner (Panorama Environmental, Inc., 2013d) and shall include all revisions deemed necessary by BLM, USFWS, and CDFW. The final plan will be subject to modification for consistency with USFWS take authorization and/or Biological Opinion conservation requirements.</p>		<p>Prepare DTTP prior to construction Implement measures during all Project phases</p>	<p>BLM, CDFW, and USFWS</p>
<p>Mitigation Measure 3.4-2c: Desert Tortoise Compliance Verification. The Applicant/Owner shall provide BLM, CDFW, and USFWS staff with unfettered access to the Project site and compensation lands under the control of the Project owner and shall otherwise fully cooperate with the BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, adopted mitigation measures. The Designated Biologist shall do all of the following:</p> <p>1. Notification. Notify the BLM Authorized Officer at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the BLM in writing if the Project owner is not in</p>		<p>During all Project phases</p>	<p>BLM, CDFW, and USFWS</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification;</p> <p>2. Monitoring During Grubbing and Grading. Remain on site daily while vegetation salvage, grubbing, grading, and other ground-disturbing construction activities are taking place to avoid or minimize take of listed species, and verify personally or have Biological Monitor(s) verify compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.</p> <p>3. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to the BLM, USFWS, and CDFW during construction.</p>			
Biological Resources – Wildlife (cont.)			
<p>4. Notification of Injured or Dead Listed Species. If an injured or dead federal- or state-listed species is detected on or near the Project site, BLM, CDFW, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via facsimile or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:</p> <p>a. Injured Desert Tortoise. If a desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist or Biological Monitor(s) shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Applicant/Owner. Following phone notification as required above, the CDFW and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.</p> <p>b. Desert Tortoise Fatality. If a desert tortoise is killed by Project-related activities during construction, operation and maintenance, or decommissioning, a written report with the same information as an injury report shall be submitted to the BLM, CDFW, and USFWS. These desert tortoises shall be salvaged according to federally established guidelines. The Applicant/Owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.</p> <p>5. Final Listed Species Report. The Designated Biologist shall provide BLM a Final Listed Species Mitigation Report that includes, at a minimum: 1) all available information about Project-related incidental take of listed species; 2) information about other Project impacts on the listed species; 3) construction dates; 4) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 5) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 6) any other pertinent information, including the level of take of the listed species associated with the Project.</p> <p>6. Stop Work Order. The BLM may issue the Project owner a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or protected species. The Project owner shall comply with the stop work order immediately upon receipt thereof.</p>			
<p>Mitigation Measure 3.4-2d: Desert Tortoise Compensatory Mitigation: To fully mitigate for habitat loss and potential take of desert tortoise, the Project owner shall provide compensatory mitigation consistent with federal requirements, adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the proposed Project, including all Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable</p>		<p>During all Project phases</p>	<p>BLM, CDFW, and USFWS</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>long-term habitat for the desert tortoise. To satisfy this condition, the Project owner shall acquire, protect, and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this measure.</p> <p>If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement, and long-term management of compensation lands include all of the following; subject to modification by the terms of incidental take authorizations issued by the USFWS and CDFW:</p> <p>1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall:</p>			
Biological Resources – Wildlife (cont.)			
<p>a. be within the Western Mojave Recovery Unit, or, with prior USFWS approval, within the Eastern Mojave Recovery Unit as defined in the 2011 Revised Recovery Plan (USFWS, 2011a), with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;</p> <p>b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;</p> <p>c. be prioritized near larger blocks of lands that are either already protected or planned for protection, such as DWMA within the Western Mojave Recovery Unit (or nearby portions of the Eastern Mojave Recovery Unit with prior USFWS approval) or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;</p> <p>d. be connected to lands with desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover;</p> <p>e. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;</p> <p>f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;</p> <p>g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and</p> <p>h. have water and mineral rights included as part of the acquisition, unless the BLM, in consultation with CDFW and USFWS, agrees in writing to the acceptability of the land.</p> <p>2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the BLM, CDFW, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the BLM in consultation with CDFW and the USFWS shall be required for acquisition of all compensatory mitigation parcels.</p> <p>3. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the BLM, in consultation with CDFW and USFWS, have approved the proposed compensation lands:</p> <p>a. Preliminary Report. The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM, in consultation with CDFW and USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Conservation Board.</p> <p>b. <i>Title/Conveyance.</i> The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the BLM. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or BLM under terms approved by the BLM. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary.</p>			
Biological Resources – Wildlife (cont.)			
<p>c. <i>Initial Habitat Improvement Fund.</i> The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code Section 65965) and if it meets the approval of CDFW and the BLM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.</p> <p>d. <i>Property Analysis Record.</i> Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.</p> <p>e. <i>Long-term Maintenance and Management Fund.</i> The Project owner shall deposit in NFWF’s REAT Account a capital long-term maintenance and management fee in the amount determined through the PAR or PAR-like analysis conducted for the compensation lands.</p> <p>The BLM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.</p> <p>f. <i>Interest, Principal, and Pooling of Funds.</i> The Project owner, BLM, and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:</p> <p>i. <i>Interest.</i> Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.</p> <p>ii. <i>Withdrawal of Principal.</i> The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.</p> <p>iii. <i>Pooling Long-Term Maintenance and Management Fee Funds.</i> CDFW, or a BLM- and CDFW-</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW.</p> <p>g. <i>Other expenses.</i> In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to: title and document review costs; expenses incurred from other state agency reviews; overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.</p>			
Biological Resources – Wildlife (cont.)			
<p>h. <i>Mitigation Security.</i> The Project owner shall provide financial assurances to the BLM and CDFW with copies of the document(s) to the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The BLM's or CDFW's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial assurance can be provided to the BLM and CDFW in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security"). Prior to submitting the Security to the BLM, the Project owner shall obtain the BLM's approval in consultation with CDFW and the USFWS of the form of the Security. The actual costs to comply with this condition will vary depending on the final footprint of the Project and the actual costs of acquiring, improving, and managing the compensation lands.</p> <p>i. NFWF REAT Account. The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than anticipated in the PAR analysis, the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.</p> <p>The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the BLM and CDFW. Such delegation shall be subject to approval by the BLM and CDFW, in consultation with USFWS, prior to land acquisition, initial protection, or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented with 18 months of BLM's approval.</p>			
<p>Mitigation Measure 3.4-3a: Bighorn Sheep Habitat Connectivity. In addition to APM 75, which will provide two water sources to improve bighorn sheep habitat connectivity, this measure provides additional detail and requirements for the proposed water sources. Water sources will be designed to exclude ravens to the extent possible, to minimize potential indirect effects on other wildlife species such as desert tortoise and Mojave fringe-toed lizard. To compensate for impacts to bighorn sheep habitat connectivity, the Applicant/Owner shall support current CDFW and NPS efforts to encourage connectivity of bighorn sheep populations between the south Soda Mountains, the north Soda Mountains, and the Avawatz Mountains, which are located further to the north of the Project site. More specifically, the Applicant/Owner shall provide funding for CDFW, or similar entity, to install between three and five (total) pre-fabricated bighorn sheep water sources (e.g., guzzlers) in the north Soda Mountains/Avawatz Mountains corridor and provide funding to refill them through the life of the</p>		<p>Provide funding for water sources prior to start of commercial operation</p> <p>Monitor, maintain, and provide refill funding for water sources during all Project phases</p>	<p>BLM and CDFW</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>project. The Project owner shall consult with BLM and with the CDFW Desert Bighorn Sheep Program Coordinator to identify strategic locations for water sources to promote bighorn sheep migration through the north Soda Mountain range. Water sources will be situated in locations that: 1) facilitate use of existing I-15 crossing sites at culverts and bridges; 2) are situated at key locations within the movement corridor; 3) are accessible using existing roads whenever possible for filling and maintenance; and 4) are situated outside of existing wilderness boundaries and outside of wilderness study areas. The Project owner shall monitor and manage the artificial or restored water source for the benefit of bighorn sheep for the life of the Project, or shall provide sufficient funding to support such monitoring and management by an approved third party. At the end of the Project, CDFW shall have the option to retain and manage the water sources or have them removed by the Applicant/Owner during the decommissioning process.</p>			
<p>Biological Resources – Wildlife (cont.)</p>			
<p>Mitigation Measure 3.4-3b: Bighorn Sheep Adaptive Management Strategy. The Applicant/Owner shall implement a <i>Bighorn Sheep Adaptive Management Strategy</i> in coordination with the BLM, NPS, and CDFW aimed at maintaining existing foraging, movement, and feeding opportunities for bighorn sheep near the Project site and at improving regional opportunities to restore bighorn sheep movement. The <i>Bighorn Sheep Adaptive Management Strategy</i> shall be submitted to the BLM, NPS, and CDFW for review and approval prior to initiation of ground-disturbing activities on the Project site and shall include, at a minimum, the following provisions:</p> <ol style="list-style-type: none"> 1. The Applicant/Owner shall fund and/or implement a 10-year study that examines the response of bighorn sheep to the Project. This may include the use of radio collars to track the movements of bighorn sheep prior to, during, and post-construction. The study will be conducted in coordination with BLM, CDFW, and NPS. The tracking of bighorn sheep will inform the adaptive management approaches that follow. 2. The Applicant/Owner shall improve the culvert crossing north of Zzyzx Road for bighorn sheep through the use of temporary water sources on both sides of the I-15 freeway. Water sources will be maintained and refilled for a minimum period of 10 years. With CDFW approval, the Applicant/Owner will implement a monitoring study to examine bighorn sheep behavior near the temporary water sources through the use of motion-sensor cameras, radio tracking collars, direct observation of sheep sign (e.g., the presence of tracks or scat), and/or by other means. 3. If the temporary water sources successfully encourage bighorn sheep to use the culvert crossing, as measured by sheep drinking from the water sources and/or crossing through the culvert, identified through the study implemented in item 1, the water sources shall be left in place permanently. Concurrently, the one to three additional water sources described in Mitigation Measure 3.4-3a to encourage use of the north Soda Mountains/Avawatz Mountains corridor also shall be left in place and maintained/filled for the life of the Project. 4. Based on the results of item 1, the Applicant/owner will implement measures to minimize the effects of human activities on bighorn sheep. Such actions may include removing fences that currently block underpass movement, establishing new fences to funnel sheep towards underpasses and away from traffic, using shields to reduce the noise and visibility of traffic in key locations, screening to visually separate the North Arrays from the wildlife crossing, and/or redirecting Project traffic to the portion of the Project site on the northwest side of I-15 from Blue Bell Mine Road to an access road to the south of the North Array. 5. The Applicant/Owner shall establish a \$250,000 bond prior to the start of construction to be used either to fund the construction of a wildlife crossing over I-15 near the Project site, or at CDFW's discretion, to conduct regional translocation of bighorn sheep (see Mitigation Measure 3.4-3e, Bighorn Sheep Demographic and Genetic Management). If culvert crossing is not successful within 10 years of deploying the artificial water sources (identified through the study implemented in item 1), then within 6 months of the end of the tenth year, the Applicant/Owner shall coordinate with CDFW, Caltrans, NPS, and BLM to apply the bond toward the design, study, and/or construction of a wildlife crossing over I-15. Two potential locations have been considered to date, with the preferred location located north of the East Arrays and 		<p>Prepare strategy prior to construction Implement study during initial 10 years of commercial operation Establish bond prior to construction</p>	<p>BLM, NPS, and CDFW</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>approximately 0.3 mile south of the Zzyzx Road off-ramp on I-15. The bridge design specifications will include temporary water sources on either side to encourage sheep use.² Following construction, the Applicant/Owner will implement a 10-year study that examines bighorn sheep use of the crossing site using the survey methods described for the culvert crossing, above. In order to provide for bighorn sheep demographic and genetic management, the Applicant/Owner shall establish a \$250,000 bond prior to the start of construction to be used, at CDFW's discretion, to conduct regional translocation of bighorn sheep. If at any time, efforts are undertaken to construct an overcrossing near the Project, with the approval of BLM, NPS, and CDFW, these funds may be allocated to that construction effort.² If at any time, prior to expenditure of these funds, bighorn sheep are documented to move through the existing undercrossings between north and south Soda Mountains, or a bighorn sheep population has become established in the North Soda Mountains, these funds may be allocated for bighorn sheep connectivity and genetics management projects elsewhere in the Mojave desert."</p>			
Biological Resources – Wildlife (cont.)			
<p>Mitigation Measure 3.4-3c: Bighorn Sheep Monitoring. The Applicant will retain a biological consultant approved by the BLM, USFWS, and CDFW to serve as the Bighorn Sheep Monitor of construction activities located within 1,000 feet of bighorn sheep foraging or bedding areas. The Bighorn Sheep Monitor will be present if proposed construction activities are planned within approximately 0.5 mile of 20 percent slopes or within 0.25 mile of 10 percent slope (whichever is less). If bighorn sheep are observed, no construction activities will be conducted within 1,000 feet of the sheep until the Bighorn Sheep Monitor verifies that the sheep have moved to at least 1,000 feet from planned activities. If the Bighorn Sheep Monitor determines that planned activities are unlikely to adversely affect or disrupt normal sheep behavior, planned activities may proceed. If the Bighorn Sheep Monitor is not present on site when sheep are observed, all proposed activities within 0.5 mile of 20 percent slope or 0.25 mile of 10 percent slope will stop and the Bighorn Sheep Monitor will be contacted immediately for guidance on how to proceed with planned activities. The Bighorn Sheep Monitor will prepare daily monitoring reports that will be submitted to the Designated Biologist and BLM, NPS, and CDFW.</p>		During construction	BLM, NPS, and CDFW
<p>Mitigation Measure 3.4-3d: Bighorn Sheep Habitat Compensation. The Applicant/Owner shall acquire and protect suitable bighorn sheep foraging habitat to compensate for the loss of on-site foraging habitat within 0.25 mile of 10 percent slopes; estimated at 729 acres for the Proposed Action. The actual amount of compensation habitat shall be determined based on the final, BLM-approved construction plans. The off-site replacement habitat shall be connected to existing occupied bighorn sheep habitat. Compensation can be in the form of fee title acquisition or the acquisition of conservation easement or other habitat protecting measure. Compensation habitats must be approved by BLM and CDFW.</p>		Prior to start of commercial operation	BLM and CDFW.
<p>Mitigation Measure 3.4-3e: Bighorn Sheep Demographic and Genetic Management. In lieu of bridge funding, the bond described in Mitigation Measure 3.4-3b, Bighorn Sheep Adaptive Management Strategy, may be applied at CDFW's discretion toward bighorn sheep demographic and genetic management. If at any time, efforts are undertaken to construct an overcrossing near the Project, with the approval of BLM, NPS, and CDFW, these funds may be allocated to that construction effort. If at any time, prior to expenditure of these funds, bighorn sheep are documented to move through the existing undercrossings between north and south Soda Mountains, or a bighorn sheep population has become established in the North Soda Mountains, these funds may be allocated for bighorn sheep connectivity and genetics management projects elsewhere in the Mojave desert.</p>		Following establishment of bond	BLM, NPS, and CDFW
<p>Mitigation Measure 3.4-4: Avoid Disturbance to Nesting Birds. Vegetation clearing shall take place outside of the general avian breeding season (February 15 to September 1), when feasible. If vegetation clearing cannot occur outside the avian breeding season, the Designated Biologist/Biological Monitor(s) shall conduct a preconstruction survey for nesting birds no more than three (3) days prior to vegetation clearing. If no active nests are found, clearing can proceed. If active nests are found, no clearing shall be allowed within 150 feet (for passerines) to 250 feet (for raptors) of the active nests until the Designated Biologist/Biological Monitor(s)</p>		Survey prior to construction	BLM, CDFW, and USFWS.

² Implementation of wildlife crossings would require additional NEPA and CEQA analysis as well as biological and cultural resources surveys, as an agreed upon location has not been surveyed during this EIS/EIR process.

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>determines the nest is no longer active or the nest fails. The Designated Biologist/Biological Monitor(s) shall submit the results of the pre-construction nesting bird surveys to the BLM, USFWS, and CDFW. Following agency coordination, the size of the next buffer may be adjusted based upon the magnitude of proposed activities and observed sensitivity of the bird to disturbance.</p>			
<p>Mitigation Measure 3.4-5a: Minimize Vehicle and Equipment Impacts during Operation and Maintenance. The Applicant/Owner shall implement measures to minimize the potential for desert tortoise and other wildlife species mortality along access and maintenance roads. These measures shall include:</p> <ol style="list-style-type: none"> 1. Speed limits identified in Mitigation Measure 3.4-1d shall continue to be applied during operation and maintenance. 2. Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground-disturbing activities take place. 3. Vehicle traffic and parking shall be confined to designated access roads, and equipment and materials staging areas shall be clearly defined to avoid impacting habitat during the operation phase. 		During construction	BLM
Biological Resources – Wildlife (cont.)			
<p>Mitigation Measure 3.4-5b: Operation and Maintenance Education Program. A WEAP shall be implemented during the operation and maintenance phase of the Project to alert workers to the hazards posed by ongoing operations to common and special-status wildlife species. The WEAP shall be repeated annually and include the same program elements discussed in Mitigation Measure 3.4-1c.</p>		During operation and maintenance	BLM
Cultural Resources			
<p>Mitigation Measure 3.6-1: Prior to any ground disturbing activities, the Applicant shall retain a qualified archaeologist, defined as one meeting the Secretary of the Interior’s Professional Qualifications Standards for archaeology and subject to approval by the BLM, to conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of cultural resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources. The Applicant shall ensure that all construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance.</p>		Prior to and during construction	BLM
<p>Mitigation Measure 3.6-2: A Cultural Resources Discovery and Monitoring Plan (CRDMP) shall be developed at least 30 days prior to ground disturbing activities and implemented by an archaeologist who meets the Secretary of the Interior’s Professional Qualifications Standards for archaeology. The CRDMP shall detail provisions for the archaeological monitoring of Project construction. Archaeological monitoring during ground-disturbing activities shall be conducted by an archaeologist familiar with the types of historic and prehistoric resources that could be encountered within the APE, who shall have the authority to halt construction in the event of a discovery. The archaeological monitor shall work under the direct supervision of the qualified archaeologist. All cultural resources personnel will be approved by the BLM.</p> <p>The CRDMP shall detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native Americans, and assessing National Register- and California Register-eligibility in the event that unknown cultural resources are discovered during construction. The CRDMP shall require that the contractor immediately cease all work activities in the area (within 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. After cessation of excavation, the contractor shall immediately contact the BLM Archaeologist. The contractor shall not resume work until authorization from the BLM is received.</p> <p>If the qualified archaeologist, in consultation with BLM, determines that the discovery constitutes a historic property per Section 106 of the National Historic Preservation Act or a historical or unique archaeological resource under the California Environmental Quality Act, preservation in place shall be the preferred manner of mitigation (Public Resources Code §21083.2). In the event preservation in place is demonstrated to be infeasible, a treatment plan shall be prepared by the qualified archaeologist and shall be approved by the BLM</p>		<p>Develop plan 30 days prior to ground disturbance</p> <p>Implement plan during construction</p>	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>prior to implementation. The BLM shall consult with appropriate Native American representatives in determining appropriate treatment for unearthened cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curational facility. The CRDMP shall include provisions for reporting of monitoring and any treatment of resources in a timely manner.</p>			
<p>Mitigation Measure 3.6-3: If human remains are discovered during construction, all work shall be diverted from the area of the discovery and the BLM Authorized Officer shall be informed immediately. The BLM shall ensure that any Native American human remains, funerary objects, sacred objects, and/or objects of cultural patrimony discovered on BLM administered lands during implementation of the Project will be treated in accordance with the requirements of the Native American Graves Protection and Repatriation Act (NAGPRA) (Pub. L. 101-601, 25 USC § 3001 et seq.) and 43 CFR Section 10. Avoidance and protection of inadvertent discoveries that contain human remains through Project redesign shall be the preferred protection strategy.</p>		During construction	BLM
Geology and Soil			
<p>APM 11: Facilities will be built in accordance with San Bernardino County and California State Building Code requirements applicable to “Seismic Zone 3.” No human-occupied structures will be placed across the trace of a documented active fault. No human-occupied structure will be placed within 50 feet of the trace of an active fault or within a seismic special studies zone without a fault evaluation report, satisfactory to the State Geologist, demonstrating that no undue hazard would be created by the construction or placement of the structure.</p>		Prior to and during construction	BLM and San Bernardino County
<p>APM 12: Roads shall be constructed at grade to maintain existing drainage patterns during storm events. Unpaved access roads shall be constructed of compacted native soils. Rock or gravel may be added to unpaved roads for stabilization to prevent rutting or erosion.</p>		During construction	BLM
<p>APM 13: Disturbed areas where clearing, grubbing, and cut-and-fill are required shall be compacted once construction is complete for greater resistance to wind erosion.</p>		Following completion of construction	BLM
<p>Mitigation Measure 3.7-1: Soil Erosion Control Plan Review and Approval. The Project SWPPP or BMP Plan required by Lahontan RWQCB for compliance with its General Permit R6T-2003-0004 and prepared consistent with its Project Guidelines for Erosion Control (Board Order No R6T-2003-0-04 Attachment G; Lahontan RWQCB, 2003) shall be prepared and submitted to the BLM and County for review and approval by a watershed specialist, hydrologist, and/or engineer from each lead agency before implementation. Erosion control and drainage plans for new and existing roads to be utilized for the Project shall be aimed at maintaining to the greatest extent feasible existing soil quality and integrity. In developing the Plan, the Applicant or its contractor shall consult with the BLM and the County to determine the appropriate soil quality objective(s) to be met following construction (for temporary construction disturbances) and following decommissioning (for total site restoration). As part of the erosion control and drainage plans, the Applicant and/or its contractor shall implement an appropriate combination of BMPs in order to meet or exceed the applicable soil quality objective(s) (e.g., maintain or enhance soil quality and function).</p> <p>All measures and facilities for controlling runoff and erosion shall be in place prior to ground disturbing activities. Desert tortoise fencing shall be installed consistent with part six of Mitigation Measure 3.19-2, which requires approved design to ensure a minimum impact to existing washes and to limit any substantial increase of erosion or sediment transport. Any desert tortoise fencing that creates substantial excess soil shall have straw wattles or other measures installed to prevent soil transport.</p> <p>All erosion control facilities shall be monitored immediately following a qualified storm event. A major rainfall event is defined as one for which flow is visibly detectable within the fenced drainage. All repairs shall be completed prior to the commencement of ground disturbing activity. Any erosion control facilities that are damaged by rainfall shall be repaired within 72 hours of any damage and shall be monitored after any precipitation. Clearance reports and inspection logs shall be submitted to the BLM and the County for approval. Substantial damage to erosion control facilities shall be reported to the BLM and the County and per the above, no ground disturbing activity shall restart until the facilities are repaired.</p>		<p>Submit plan 30 days prior to ground disturbance</p> <p>Implement plan during site preparation and ground-disturbing activities</p>	BLM and San Bernardino County

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Mitigation Measure 3.7-2: Soils and Geotechnical Investigation. Prior to construction of Project facilities, a qualified California-licensed geotechnical engineer shall prepare and submit to BLM a final geotechnical investigation that provides design requirements for foundations, retaining walls/shoring, and excavation, compliant with the applicable seismic design standards in the 2013 California Building Code (24 Cal. Code Regs. Part 2). The scope of the geotechnical report shall include the solar array fields, collection line routes, substation and switchyard site, and the operation and maintenance buildings sites. The geotechnical investigation shall expand upon the preliminary investigations as necessary and identify and evaluate the presence of expansive, compressible, liquefiable, or mechanically unstable soils and, if present, shall make recommendations for site preparation or design necessary to avoid or reduce adverse structural impacts. Structural foundations shall not be founded on engineered fill, nor on native soil, unless it is demonstrated that the soils would be adequate to support the foundation. A California-licensed geotechnical engineer shall be retained by the Applicant to be present on the Project site during excavation, grading, and general site preparation activities to monitor the implementation of the recommendations specified in the geotechnical investigation. When/if needed, the geotechnical engineer shall provide structure-specific geologic and geotechnical recommendations that shall be documented in a report approved by the permitting agency.</p>		<p>Submit plan 30 days prior to construction Implement recommendations in final design</p>	<p>BLM</p>
Geology and Soil (cont.)			
<p>Mitigation Measure 3.7-3: Septic Site Feasibility Tests. Standard in-situ testing (deep percolation tests) would be performed at locations where septic or alternative wastewater disposal systems are proposed. The Applicant shall document that any proposed sites for septic or alternative wastewater disposal systems meet all applicable standards, and that documentation shall be made available to BLM.</p>		<p>Perform tests and submit documentation to BLM at least 30 days prior to construction of septic or alternative wastewater disposal systems</p>	<p>BLM</p>
<p>Mitigation Measure 3.7-4: Protection of Desert Pavement. Grading and other methods of ground disturbance in areas covered by desert pavement shall be avoided or minimized. If avoidance of these areas is not possible, the desert pavement surface shall be protected from damage or disturbance from construction vehicles by use of temporary mats on the surface. A Desert Pavement Identification, Avoidance, and Protection Plan shall be prepared and submitted to the BLM for review and approval at least 60 days prior to start of construction which shall include, at a minimum:</p> <ol style="list-style-type: none"> 1. A pre-construction survey using accepted methodology to identify areas covered by desert pavement; 2. Identification of areas covered by desert pavement that can feasibly be avoided and methods for avoidance, such as through placement of Project structures during final design, flagging and/or fencing areas of desert pavement for avoidance, and/or other measures; 3. Identification of areas covered by desert pavement that cannot feasibly be avoided and methods for protection, including at a minimum the use of temporary mats on the surface. Other methods may include restrictions on vehicle weight in addition to the use of mats. 		<p>Submit plan at least 60 days prior to start of site preparation for construction Implement plan during construction</p>	<p>BLM</p>
Hazards			
<p>APM 22: General material safety data sheets for all hazardous materials stored on site will be retained on site during Project construction and operation.</p>		<p>During all Project phases</p>	<p>BLM</p>
<p>APM 23: On-site fueling of equipment and vehicles shall be completed in areas at least 100 feet away from drainages, or in designated fueling areas. Fuel stored on site will be located in areas with secondary containment, unless secondary containment is built into the tank.</p>		<p>During all Project phases</p>	<p>BLM</p>
<p>APM 24: Transformers shall be inspected for oil leakage on a regular basis and diversionary structures shall be provided for all oil-containing equipment, including transformers, at the Project site.</p>		<p>During all Project phases</p>	<p>BLM</p>
<p>APM 25: Employees shall attend a health and safety training and shall be trained in the proper protocol for notification and cleanup of hazardous materials.</p>		<p>During all Project phases</p>	<p>BLM</p>
<p>APM 26: A Health and Safety Plan, which complies with all OSHA and Cal-OSHA guidelines for the types of activities being performed, shall be prepared and presented to all personnel on site during construction and</p>		<p>During all Project phases</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
operation.			
APM 27: During conductor installation, guard structures consisting of temporary H-frame poles shall be erected over any natural or manmade obstacles to shield them from falling objects.		During construction	BLM
Lands and Realty			
Mitigation Measure 3.9-1: Prior to the start of construction, the Applicant shall provide cadastral survey data to the BLM for all sections within the requested ROW. All section corners shall be surveyed and monumented, and a record map completed and filed with San Bernardino County to ensure the descriptions for all lands within the Right-of-Way are recorded correctly.		Prior to construction	BLM
Mitigation Measure 3.9-2: Prior to issuance of the NTP, the Applicant shall provide 100 percent design drawings to the BLM for review and approval.		Prior to issuance of NTP	BLM
Noise			
APM 28: Noise exposure for construction and maintenance workers shall adhere to all federal, California, and San Bernardino County noise exposure regulations		During all Project phases	BLM and San Bernardino County
Mitigation Measure 3.11-1: Construction and decommissioning activities associated with the operation and maintenance buildings, pile driving within 1.5 miles of residences, and the Razor Road reroute within 1 mile of residences shall not occur between the hours of 10:00 p.m. and 7 a.m., Monday through Saturday, or at any time on Sundays.		During construction and decommissioning	BLM
Paleontological Resources			
Mitigation Measure 3.12-1: Prior to any ground disturbing activity, design plans shall be compared with geotechnical data and foundation design requirements compiled under Mitigation Measure 3.7-2 to determine whether the subsurface geology has a higher paleontological sensitivity than the surface geology, and whether construction will disturb the underlying higher sensitivity geologic units. If disturbance will occur in areas found to meet the PFYC designation of 3 or higher, then monitoring of construction excavations in the disturbance areas shall take place in order to reduce potential adverse effects on significant paleontological resources.		Prior to construction	BL
Mitigation Measure 3.12-2: Prior to construction, a training session on the recognition of the types of paleontological resources that could be encountered within the requested ROW boundary and the procedures to be followed if they are found shall be presented to Project personnel by a qualified and BLM-permitted professional paleontologist.		Prior to construction	BLM
Mitigation Measure 3.12-3: Based on the results of the field survey (PaleoResource Consultants, 2009) and in accordance with the BLM's paleontological resource management policies, monitoring shall take place in all areas where excavations that disturb areas with PFYC designations of 3, 4, and 5 would occur during any Project phase. The monitoring program shall be designed and implemented by a qualified and BLM-permitted professional paleontologist and shall be consistent with Section IV of the Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources (BLM, 2008b). All scientifically significant fossils salvaged during construction monitoring shall be prepared to the point of curation, identified to element and the lowest possible taxonomic level, and transferred to the San Bernardino County Museum for permanent storage. The results of the paleontological monitoring program, including an itemized inventory of salvaged fossils, shall be detailed in a Final Paleontological Monitoring Report prepared according to BLM policy (BLM, 1998, 2008a, 2008b).		During construction	BLM
Mitigation Measure 3.12-4: If any potential fossils are discovered during construction, operation and/or maintenance activities, or during decommissioning, all activities within 100 feet in all directions from the		During all Project phases	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>discovery shall cease immediately to protect the discovery and its geological context from damage, and the Applicant shall notify the BLM Authorized Officer immediately. As soon as possible, but not later than 10 working days after being notified, the BLM Authorized Officer shall notify and work with a qualified and BLM-permitted professional paleontologist to evaluate the significance of the discovery. The BLM Authorized Officer and BLM-permitted professional paleontologist shall determine appropriate measures to mitigate adverse effects to significant paleontological resources in consultation with the Applicant. Activities may not resume within 100 feet in any direction of the discovery until the BLM Authorized Officer and BLM-permitted professional paleontologist concur that activities may resume.</p>			
Recreation			
<p>APM 32: The relocated segment of Razor Road shall be completed and open to traffic prior to the permanent closure and decommissioning of the pre-Project (existing) location of Razor Road.</p>			
<p>Mitigation Measure 3.13-1: Travel Management Area Maps for the Project area showing open, closed, and limited travel routes and open OHV areas shall be updated and printed by the Applicant for posting by the BLM during each phase of the Project when the status or location of routes and/or open areas changes as a result of Project construction, operation and maintenance, and/or decommissioning. These notices and signs shall clearly describe which routes and open areas will be closed temporarily or permanently.</p>		During all Project phases	BLM
<p>Mitigation Measure 3.13-2: If the Project encroaches on the Razor OHV Area, the Applicant shall provide for and fund the BLM in the preparation of a Recreation Area Management Plan for the Razor Road OHV area. Preparation of the Plan shall include baseline studies, field review and survey, planning documentation, and NHPA 106 and Section 7 compliance.</p>	Clarifies applicability of measure.	Prior to construction	BLM
<p>Mitigation Measure 3.13-3: If an alternative resulting in the realignment of Razor Road is implemented, the Applicant shall install the new BLM informational kiosk at the entrance to the Razor OHV Area along the relocated Razor Road, at the location shown in Figure 3.13-2. The design for the relocated four-panel kiosk shall be submitted to the BLM for review and shall be approved by the BLM prior to installation of the new kiosk and prior to removal of the existing kiosk. The new kiosk shall be installed prior to the closure of the existing Razor Road to facilitate the BLM's communication with visitors to the Razor OHV Area.</p>		Prior to and during construction, operations, and maintenance	BLM
Transportation			
<p>APM 29: If Project traffic is scheduled on Fridays between 10:00 a.m. and 6:00 p.m. (on northbound I-15) and/or on Sundays between 11:00 a.m. and 8:00 p.m. (on southbound I-15), the Applicant shall implement a departing vehicle plan for those hours on Fridays and Sundays. The plan shall specify that work crew departures will be staggered on Friday and Sunday afternoons to avoid impacts to I-15 mainline traffic LOS.</p>		During construction and decommissioning	BLM
<p>APM 30: The Applicant shall document road conditions on Razor Road, Blue Bell Mine Road, and any other local construction access roads prior to and the end of project construction and decommissioning, and restore the roads to pre-construction (and pre-decommissioning) conditions if construction damage is documented. The Applicant shall present a plan for restoration to the BLM and San Bernardino County within 60 days of completing construction and decommissioning. The restoration shall occur within 180 days of the BLM and San Bernardino County approval of the plan.</p>		<p>Document road conditions during construction and decommissioning</p> <p>Submit restoration plan within 60 days of completing construction and decommissioning</p> <p>Implement plan within 180 days of plan approval by both agencies</p>	BLM and San Bernardino County
<p>APM 31: Emergency access to the site shall be maintained at all times.</p>		During all Project phases	BLM.
<p>APM 32: The relocated segment of Razor Road shall be completed and open to traffic prior to the permanent closure of decommissioning of the pre-Project location of Razor Road.</p>		Prior to decommissioning.	BLM.

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
Visual			
<p>APM 42: Where appropriate, a paint color acceptable to the BLM shall be used on project buildings to blend more naturally with the existing setting.</p>		During all Project phases	BLM
<p>APM 43: Lighting on the Project site shall be dark sky-compliant. Lighting shall be limited to areas required for operations or safety, directed on site to avoid backscatter, and shielded from public view to the extent practical. Lighting that is not required during nighttime hours shall be controlled with sensors or switches operated such that lighting will be on only when needed.</p>		During operation and maintenance	BLM
Visual (cont.)			
<p>Mitigation Measure 3.18-1a: Siting and Design. Visual design elements shall be integrated into the construction plans, details, shop drawings and specifications; these shall include, but not be limited to, grubbing and clearing, vegetation thinning and clearing, grading, revegetation, drainage, and structural plans. Visual design elements within the plans shall be measurable by size and monitored while under construction, while operational, and when decommissioned.</p> <p>A careful study of the site shall be performed to identify appropriate colors and textures for materials; both summer and winter appearance shall be considered as well as seasons of peak visitor use (September 15 to April 15). Visual design elements to be integrated into construction plans, details, shop drawings and specifications must at a minimum include:</p> <ol style="list-style-type: none"> 1. <i>Vary the grid layout to reduce contrast caused by long straight roads</i> – Employ an off-set in the grid layout to reduce visual contrast caused by long straight roads and, to the extent possible, arrays. The result shall be that no road extends from one side of the solar field to the other in a straight line. To further reduce contrast caused by exposing un-oxidized soils and rock in roadways, at select locations of concern from KOPs, spot applications of a product such as Permeon shall be used to dull and darken the ground plane in a short time. 2. <i>Color treat structures to reduce contrasts with the existing landscape</i> – In order to ensure the implementation of APM 42 and supplement its requirements to address adverse impacts, the Applicant shall color treat all operation and maintenance facilities, rear surfaces of the collectors, frames, tracker structures, PCS, and water tank facilities using a BLM standard environmental color that is identified through a site study for color and texture selection and approved by the BLM. Grouped structures shall be treated with the same color. Further: <ol style="list-style-type: none"> a. Materials, coatings, or paints having little or no reflectivity shall be used whenever possible. b. Materials, coatings, or paints having little or no specular or reflective qualities shall be used on structures including, but not limited to, buildings, tanks, fences, fence railings, poles, aboveground pipes and culverts, and reverse sides of signs and guardrails. Substation equipment shall be specified with a low-reflectivity neutral finish. Insulators at substations and on takeoff equipment shall be non-reflective and non-refractive. The surfaces of substation structures shall be given low-reflectivity finishes with neutral colors that contrast minimally with the surrounding landscape. Chain-link fences are to have a dulled, darkened finish to reduce contrast. 3. <i>Lighting</i> – In order to ensure the implementation of APM 43 and supplement its requirements to address adverse impacts, all permanent lighting, except as required to meet minimum safety and security requirements, shall use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the light source), and must meet the Illuminating Engineering Society (IES) glare requirement limiting intensity of light from the luminaire in the region between 80 and 90 degrees from the ground. All fixtures must be mounted properly, at the proper angle. Further: <ol style="list-style-type: none"> a. Construction and operational (permanent) lighting – Except as required to meet safety and security 		<p>Implement requirements in final design and construction plans</p> <p>Monitor visual design elements during all Project phases</p>	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>requirements, there shall be no exterior nighttime lighting on the Project site during the construction and operation periods. For these purposes, “nighttime” means the period of time between two hours after sunset until sunrise. To verify compliance with this measure, the Project Owner shall include a table that identifies projected times of sunrise and sunset for the upcoming month in the monthly summary reports that would be required by the Environmental and Construction Compliance Monitoring Program (ECCMP) for the project. During the compliance period, any outside nighttime lighting that would occur for safety and security reasons shall be logged and reported in the monthly summary report. The safety and security reasons that created the need for nighttime lighting shall be included in the log as well.</p>			
Visual (cont.)			
<p>b. Facility lighting – Lighting for facilities shall not exceed the minimum number, intensity, and coverage required for safety and basic security. Lighting shall be amber in color when accurate color rendition is not required. Use low-pressure sodium lamps or yellow LED lighting, or equivalent. No bluish-white lighting shall be used in permanent outdoor lighting.</p> <p>c. Lighting plan – A lighting plan shall be prepared that documents how security and safety lighting will be designed and installed to minimize night-sky impacts during facility construction and operation. The lighting plan shall include the safety and security reasons that require the need for all nighttime lighting on the facility during construction and operation periods. Lighting for facilities shall not exceed the minimum number of lights and brightness required for safety and security, and shall not cause excessive reflected glare. Low-pressure sodium light sources shall be used to reduce light pollution. Full cut-off luminaires shall be used to minimize uplighting. Lights shall be directed downward or toward the area to be illuminated. Light fixtures shall not spill light beyond the Project boundary. Lights in highly illuminated areas that are not occupied on a continuous basis shall be equipped with switches, timer switches, or motion detectors so that the lights operate only when the area is occupied. Wherever feasible, consistent with safety and security, lighting shall be kept off when not in use. The lighting plan shall include a process for promptly addressing and mitigating complaints about potential lighting impacts. The Applicant shall submit the lighting plan to the BLM for review and approval at least 30 days prior to construction.</p> <p>4. Vegetation and ground disturbance associated with access road construction, and distribution line installations shall be minimized and take advantage of existing clearings wherever feasible.</p> <p>5. Along all off-site access roads, all off-site distribution line corridors, and all internal access roads 16 feet or wider, graveled surfaces, areas to be permanently cleared of vegetation, and (if applicable) cut slopes shall be treated with rock stains or other color treatment appropriate with the surrounding landscape.</p> <p>6. Openings in vegetation for facilities, structures, and roads shall be feathered and shaped to repeat the size, shape, and characteristics of naturally occurring openings.</p> <p>7. The distribution line shall utilize nonspecular conductors and nonreflective coatings on insulators.</p>			
<p>Mitigation Measure 3.18-1b: Glint and Glare Mitigation and Monitoring. Consistent with Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands, the Applicant shall prepare and submit to the BLM a Glint and Glare Mitigation and Monitoring plan identifies mitigation measures to reduce the potential health, safety, and visual impacts associated with glint and glare, and provides for monitoring of the effectiveness and maintenance of such measures. The goals of the mitigation shall be to ensure that glare with the potential for temporary after-image effects is not visible to drivers on I-15, and that glare visible from key observation points (KOPs) 8, 13, 14, and 17 does not exceed a cumulative total duration of 30 minutes per day. Mitigation measures to achieve these goals shall include, but not be limited to:</p> <p>1. Program solar tracker arrays contributing to glare to turn away from affected KOPs during the times of day when glare visible at that KOP is generated.</p> <p>2. Consider the use of panels made with textured glass surfaces to diffuse reflected light. If the use of textured</p>		<p>Submit plan at least 30 days prior to start of construction</p> <p>Implement plan during construction and operation phases</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>glass panels is found not to be feasible, the plan shall describe the reason for its infeasibility.</p> <p>3. Where significant off-site glare is unavoidable, employ materials to reduce the effect where such materials would not result in greater adverse visual impacts than the glint or glare that would be offset, and would not result in shading the solar panels. These materials may include fencing with privacy slats or fabric screening of a BLM standard environmental color that is identified through a site study for color and texture selection and approved by the BLM, earthen berms, or vegetative screening.</p> <p>4. If glare with the potential for temporary after-image remains visible to drivers on I-15, coordinate with Caltrans to place signs warning drivers of the potential for hazardous glare.</p>			
Visual (cont.)			
<p>Mitigation Measure 3.18-2: Construction. A pre-construction meeting with BLM landscape architects or other designated visual/scenic resource specialists shall be held before construction begins to coordinate on the VRM mitigation strategy and confirm the compliance checking schedule and procedures. Final design and construction documents will be reviewed for completeness with regard to the visual mitigation elements, assuring that requirements and commitments are adequately addressed. The construction documents shall include, but not be limited to grading, drainage, revegetation, vegetation clearing, and feathering plans, and must demonstrate how VRM objectives will be met, monitored, and measured for conformance.</p> <p>1. The Applicant shall reduce visual impacts during construction by clearly delineating construction boundaries and minimizing areas of surface disturbance; preserving existing, native vegetation to the extent feasible; utilizing undulating surface-disturbance edges; stripping, salvaging, and replacing topsoil; using contoured grading; controlling erosion; using dust suppression techniques; and restoring exposed soils to their original contour and vegetation.</p> <p>2. Visual impact mitigation objectives and activities shall be discussed with equipment operators before construction activities begin.</p> <p>3. Existing rocks, vegetation, and drainage patterns shall be preserved to the extent feasible.</p> <p>4. Brush-beating or mowing or using protective surface matting rather than removing vegetation shall be employed where feasible.</p> <p>5. Slash from vegetation removal shall be mulched and spread to cover fresh soil disturbances as part of the revegetation plan. Slash piles shall not be left in sensitive viewing areas.</p> <p>6. If graveled surfaces are used during construction, the visual color contrast of graveled surfaces shall be reduced with approved color treatment practices.</p> <p>7. No paint or permanent discoloring agents shall be applied to rocks or vegetation to indicate surveyor construction activity limits.</p> <p>8. All stakes and flagging shall be removed from the construction area and disposed of in an approved facility.</p>		<p>Hold pre-construction meeting at least 30 days prior to start of construction</p> <p>Implement requirements during construction</p>	BLM
<p>Mitigation Measure 3.18-3: Operation and Maintenance. Terms and conditions for VRM mitigation compliance should shall be maintained and monitored on an annual basis for the life of the project for compliance with visual objectives, adaptive management adjustments, and modifications listed below and as necessary and approved by the BLM landscape architect or other designated visual/scenic resource specialist. Minimum measures are as follows:</p> <p>1. The Applicant shall maintain revegetated surfaces until a self-sustaining stand of vegetation which does not require supplemental water or fertilizer is re-established and visually adapted to the undisturbed surrounding vegetation. No new disturbance shall be created during operation without completion of a VRM analysis and approval by the AO.</p> <p>2. Interim restoration shall be undertaken during the operating life of the Project as soon as possible after</p>	Clarify that terms and conditions shall be maintained and monitored	During operation and maintenance	BLM

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>disturbances.</p> <p>3. Painted facilities shall be kept in good repair and repainted when color fades or flakes.</p> <p>4. Color-treated solar panel backs/supports shall be kept in good repair, and retreated when color fades and/or flakes.</p>			
Visual (cont.)			
<p>Mitigation Measure 3.18-4: Decommissioning and Site Reclamation. A Decommissioning and Site Reclamation Plan, covering visual impact mitigation measures, shall be in place prior to construction, and reclamation activities should shall be undertaken as soon as possible after disturbances occur and be maintained throughout the life of the Project. The following decommissioning/reclamation activities/practices shall be implemented to partially mitigate visual impacts associated with solar energy development, where feasible:</p> <ol style="list-style-type: none"> 1. Pre-development visual conditions, and the B-Quality scenery (BLM, 2010a) and integrity shall be reviewed, and the visual elements of form, line, color, and texture shall be restored to pre-development visual compatibility or to that of the surrounding landscape setting conditions, whichever achieves the better visual quality and most ecologically sound outcome. 2. A Decommissioning and Site Reclamation Plan shall be developed, approved by the BLM, and implemented. The plan shall require that all aboveground and near-ground structures be removed. Some structures shall be removed only to a level below the ground surface that will allow reclamation/restoration. Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation. The plan shall include provisions for monitoring and determining compliance with the Project's visual mitigation and reclamation objectives. 3. Soil borrow areas, cut-and-fill slopes, berms, water bars, and other disturbed areas shall be contoured to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. The Applicant shall contour to a rough texture (i.e., use large rocks/boulders, grade uneven surfaces, and/or vegetation mulches/debris) in order to trap seed and to discourage off-road travel, thereby reducing associated visual impacts. 4. A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting shall be utilized. Where feasible, native vegetation shall be used for revegetating to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape. 5. Stockpiled topsoil shall be reapplied to disturbed areas, and the areas shall be revegetated by using a mix of native species selected for visual compatibility with existing vegetation, where applicable, or by using a mix of native and non-native species if necessary to ensure successful revegetation. Gravel and other surface treatments shall be removed or buried. 6. Rocks, brush, and vegetal debris shall be restored whenever possible to approximate preexisting visual conditions. 7. Edges of revegetated areas shall be feathered to reduce form and line contrasts with the existing landscapes. 8. A decommissioning VRM Monitoring and Compliance Plan shall be prepared by the Applicant and approved by the BLM that establishes the schedule and terms for monitoring and the conditions and methods of measurement for determining compliance. 	<p>Clarify that reclamation activities shall be undertaken as soon as possible after disturbances occur</p>	<p>Submit plan at least 30 days prior to start of construction</p> <p>Implement plan during all Project phases following disturbances</p>	<p>BLM</p>
Water			
<p>APM 17: The groundwater model will be recalibrated using the measured aquifer properties resulting from the 72-hour aquifer test. If the results of the recalibrated model indicate that reduction in outflow from the valley would be less than 50 AFY under proposed project conditions, then no further action will be taken. If the</p>		<p>Submit recalibrated model results at least 30 days prior to construction</p>	<p>BLM and San Bernardino County</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>recalibrated model predicts reduced outflow from the northeast outlet of the Valley in excess of 50 AFY, APM 18 will be implemented.</p>			
<p>Water (cont.)</p>			
<p>APM 18: If, as described in APM 17, the recalibrated model predicts outflow from the northeast outlet of the Valley reduced by an amount in excess of 50 AFY, the Applicant will hire a professional hydrogeologist or geologist to develop a groundwater monitoring plan for submittal to and acceptance of BLM and San Bernardino County. The groundwater monitoring plan would include monitoring and quarterly reporting of groundwater levels within the Soda Mountain Valley, in the alluvial aquifer adjacent to Soda Spring and west of Soda Lake, and at Soda Spring during construction of the project. If the Project is shown to cause a decline in groundwater levels of 5 feet or more in the alluvial aquifer near Soda Spring, or there is a decrease in groundwater discharge at Soda Spring as a result of project groundwater withdrawal that results in the water level in the spring decreasing to less than 4 feet deep, which would threaten the tui chub, an evaluation would be conducted to determine if the Project is causing reduced groundwater discharge at Soda Spring. If it is determined that the Project has caused a decrease in the volume of groundwater discharged at Soda Spring such that the spring is less than 4 feet deep, thereby threatening the tui chub habitat, then the Project shall correspondingly curtail withdrawal of groundwater and import a corresponding amount of water from outside of the Soda Mountain Valley.</p> <p>Groundwater level measurements in the monitoring wells located in Soda Mountain Valley would be compared to the model predictions on an annual basis during construction and every 5 years during Project operation. The groundwater model would be recalibrated if the measured drawdown values in the monitoring wells exceed the predicted values by more than 15 percent. Monitoring would cease after 5 years of operational monitoring if two conditions are met:</p> <ol style="list-style-type: none"> 1. The monitoring data support the model predictions. 2. The model predicts the reduction in outflow from the northeast outlet will be less than 50 AFY under proposed project conditions, as detailed in APM 17. 		<p>Submit plan at least 30 days prior to construction</p> <p>Implement plan during construction and operation</p>	<p>BLM and San Bernardino County</p>
<p>APM 19: During the years of construction in which water extractions exceed 25 acre-feet per year, an annual report shall be provided and a fee shall be paid to the State Water Resources Control Board.</p>		<p>During construction</p>	<p>BLM, San Bernardino County, and State Water Resources Control Board</p>
<p>APM 20: If crossing existing washes is necessary, then at-grade crossings will be constructed to maintain existing flow channels and sediment transport, thereby leaving stormwater runoff volume unchanged.</p>		<p>During construction</p>	<p>BLM</p>
<p>APM 21: If the TDS values for Project well water exceed levels for potable water, then potable water shall be provided from another source, such as a tanker truck.</p>		<p>During construction and operation</p>	<p>BLM</p>
<p>Mitigation Measure 3.19-1: Brine Pond Design. If brine ponds are constructed for evaporation of reverse osmosis reject water, the ponds shall include berms or levees that reach at least 2 feet above the highest anticipated flood flows during a 100-year storm event, or at least 2 feet above the highest adjacent ground, whichever is greater, in order to protect the brine ponds from incident flooding events and ensure that the ponds are not inundated by flood flows.</p>	<p>Deleted. No brine ponds are approved for the Project.</p>		
<p>Mitigation Measure 3.19-2: Comprehensive Drainage, Stormwater, and Sedimentation Control Plan. The Applicant shall prepare a Comprehensive Drainage, Stormwater, and Sedimentation Plan (Plan) consistent with its Project Guidelines for Erosion Control (Board Order No R6T-2003-0-04 Attachment G; Lahontan RWQCB, 2003) prior to the initiation of construction (or, for decommissioning, drainage design that is consistent with RWQCB guidelines will be incorporated into the Final Closure Plan). Detailed hydrologic analysis will be performed prior to final design of the Project. Results of these analyses will be submitted to the BLM and County for review. All proposed grading and impervious surfaces on site shall be reviewed and approved by the BLM and County, with respect to its potential to cause or result in additional erosion and sedimentation, increased stormwater flows, or altered drainage patterns that could lead to unintentional ponding or flooding on site or downstream, and/or additional erosion and sedimentation. The Plan shall include, but not be limited to, the following measures with the overriding goal to prevent a net impact to on-site or downstream waterways</p>		<p>Submit plan at least 30 days prior to construction</p> <p>Implement plan during all Project phases</p>	<p>BLM and San Bernardino County.</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
from the alteration of on-site drainage or patterns and rates of erosion or sedimentation:			
Water (cont.)			
<ol style="list-style-type: none"> 1. All boulders and cobbles removed from construction access corridors and temporary access roads shall be stockpiled adjacent to the construction access corridors and temporary access roads. At the completion of construction (or decommissioning, as relevant), these boulders and cobbles shall be distributed on the surface of the construction access corridors and temporary access roads to help protect the exposed fine grained materials. 2. Construction of construction (or decommissioning, as relevant) access corridors and temporary and permanent access roads shall not block existing drainage channels and shall not significantly alter the existing topography. 3. The Applicant shall delineate the active drainage channels, defined as reflecting the standard flow regime for a 10-year storm event, within each drainage avoidance area, and avoid placement of proposed flood protection berms within active drainage channels. The drainage avoidance areas shall protect no less than 90 percent of the area of the active drainage channels from construction impacts. 4. The Applicant shall prepare hydraulic analyses that estimate the pre- and post-development peak discharges, water depths, and velocities for both smaller, more frequent events (2-, 5-, and 10-year events), as well as larger design storm events (100-year event) that would flow through each solar array field, drainage avoidance area, and/or on either side of each proposed flood protection berm. If hydraulic analyses indicate that flow depths and/or velocities may potentially be substantially altered for smaller, more frequent events, sediment transport analyses shall be performed to estimate changes in sediment transport from the South Array. Sediment transport from the South Array shall not significantly decrease as a result of the proposed project. 5. The Applicant shall provide the BLM design details for the flood protection berms including subgrade preparation, construction methods, and armoring or scour protection if needed (both along the drainage avoidance areas and on the array side of the berm). 6. The Applicant shall provide the BLM design details for Habitat Protection Fencing including how stormwater flows and debris will pass through the fencing. The use of flow-obstructing fencing shall be avoided; instead, fencing that allows for the passage of water while minimizing buildup of debris shall be utilized on site, such as an elevated chain link fence with a bottom portion of collapsible tortoise fence to allow it to collapse if too much ponding or debris buildup occurs. To ensure implementation of Applicant Proposed Measures 51, 66, and 70 and Mitigation Measure 3.4-2a, the Applicant shall coordinate with the BLM, CDFW, and USFWS to determine appropriate fencing design with respect to the protection of biological resources and the potential to cause or result in additional erosion and sedimentation, increased stormwater flows, or altered drainage patterns that could lead to unintentional ponding or flooding on site or downstream, and/or additional erosion and sedimentation. 			
<p>Mitigation Measure 3.19-3: Groundwater Monitoring and Mitigation Plan. The Applicant shall submit a Groundwater Monitoring and Mitigation Plan (GMMP) to the BLM and San Bernardino County. The lead agencies must review and approve the GMMP prior to Project approval and implementation. The County must approve the GMMP prior to issuance of a groundwater well permit. The GMMP shall conform to the guidelines for groundwater monitoring as detailed by San Bernardino County in the "Guidelines for Preparation of a Groundwater Monitoring Plan" (Guidelines) (San Bernardino County, 2000). The GMMP shall be prepared by a qualified professional geologist, hydrogeologist, or civil engineer registered in the State of California. The GMMP would substantially comply with the methodologies for monitoring, analysis, and reporting conditions described in the Draft GMMP presented in Appendix L and would incorporate specific thresholds for determining adverse effects on groundwater resources and corresponding corrective actions.</p> <p>The GMMP shall provide detailed methodologies for monitoring, testing, data analysis, and reporting procedures; and locate monitoring, extraction, and survey points. At a minimum, the GMMP will include</p>		<p>Submit plan prior to County issuance of a groundwater well permit and Project approval</p> <p>Implement plan during construction and operation unless lead agencies determine that monitoring requirements are no longer necessary</p>	<p>BLM and San Bernardino County</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
monitoring and quarterly reporting of groundwater levels in the observation wells installed as part of the			
Water (cont.)			
<p>Project. Additionally, the GMMP will include a methodology for baseline, construction, and operation-phase monitoring at the Desert Studies Center and Soda Spring to define baseline depths to static water level and evaluate potential impacts from Project pumping on sensitive water resources. Monitoring at the Desert Studies Center will require coordination with that organization and the Mojave National Preserve (NPS). The GMMP shall provide a contingency method for monitoring if access to information at the Desert Studies Center or from Mojave National Preserve is unavailable.</p> <p>Monitoring shall be performed during pre-construction, construction, and operation of the Project, with the intent to establish pre-construction and Project-related groundwater level trends that can be quantitatively compared against observed and simulated trends near the Project pumping wells and near potentially affected wells and sensitive water resources.</p> <p>The GMMP shall include a schedule consistent with the Guidelines for submittal of data reports to the County and the BLM, for the duration of the Project. These data reports shall be prepared and submitted to the County and the BLM for review and approval, and shall include water level monitoring data (trend analyses) from all pumping and monitoring wells. Annual data reports shall be prepared and submitted to the County and the BLM for review and approval. The annual reports must be prepared consistent with County Guidelines and contain all necessary information and data summaries.</p> <p>The fifth annual report shall be submitted to the BLM and County in the form of a revised Hydrogeology Report. The 5-year report shall include a re-evaluation of the hydrology of the Project area based upon the monitoring data and any other information available. The 5-year report shall be prepared consistent with approved County Guidelines and submitted to the County and the BLM for review and approval.</p> <p>Data collected as part of the GMMP will be used to identify deviations from baseline conditions and groundwater model projections at monitoring locations. Deviations will be identified as early as possible to allow for identification and prevention of adverse impacts to critical groundwater and surface water resources as a result of Project groundwater use. At a minimum, the specific quantitative criteria that will trigger corrective actions, to prevent significant impacts, will be clearly defined to provide operating and decision-making framework for groundwater extraction. When an action criterion is triggered, the event will be reviewed to determine whether it can be attributed to or exacerbated by Project groundwater use and, if so, the specific corrective measures to be employed to achieve the performance standards for reduction or avoidance of adverse impacts to groundwater.</p> <p>The GMMP shall contain the following action criteria, associated corrective actions, and performance standards:</p> <p>Action criterion 1. Declines in groundwater levels in Project monitoring wells in the Soda Mountain Valley that exceed model predictions by 20 percent or more than 1 foot.</p> <p>Corrective measure 1.a: The Applicant/Owner shall recalibrate the groundwater model to match the observed groundwater levels, and the predicted decline in outflow from the valley will be recalculated. The results of the recalibrated model will be submitted to BLM and the County within 60 days of the action criterion triggering event occurring. If the recalibrated model predicts a further decline in outflow of groundwater through the Soda Mountain Valley outlets by more than 20 percent over pre-pumping outflow, the Applicant/Owner will provide the BLM and the County the recalibrated groundwater model and the agencies shall identify a safe rate of groundwater extraction.</p> <p>Corrective measure 1.b: If the rate of groundwater production for the Project exceeds the identified safe extraction rate, then the rate of groundwater production shall be curtailed to the identified safe extraction rate, or less as determined by the BLM and County.</p> <p>Performance standard: A safe rate of extraction is defined as where model-predicted groundwater outflow from the valley will decrease by less than 20 percent of the pre-pumping outflow.</p>			

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Water (cont.)</p> <p>Action criterion 2. Triggering of action criterion 1 and/or a declining trend in water levels in Soda Spring where such trends are attributable to the Project and could cause water levels to decline below sustainable levels for the Mohave tui chub.</p> <p>Corrective measure 2.a: The Project shall curtail, and, if necessary, cease pumping to the extent necessary to prevent the Project from causing water levels to decline below sustainable levels for the Mohave tui chub.</p> <p>Performance standard: A significant declining trend in groundwater levels that could cause water levels to decline below sustainable levels for the Mohave tui chub is defined as five consecutive quarters of mean water level declines totaling 3 feet or more for designated monitoring wells at the Desert Studies Center, or 1 foot of decline for Soda Spring, that cannot be attributed to seasonal variation, groundwater pumping or water level manipulation at the Desert Studies Center, or other non-Project causes.</p> <p>The GMMP shall also include, at a minimum, monitoring and quarterly reporting of groundwater elevations in the aquifer adjacent to Soda Spring and water surface elevations in Soda Spring. If NPS already collects these data and is able to share them, the NPS data can be used in lieu of collecting additional data.</p> <p>The BLM and the County shall determine whether existing groundwater supply wells or other water resources surrounding the Project site, such as Soda Spring, are influenced by Project activities. The GMMP shall describe additional corrective measures that may be implemented if the County and the BLM determine that additional corrective measures are required to meet the performance standards described above. Such additional measures could include importing a portion or all of the Project's water from outside of the Soda Mountain Valley subbasin, and would be implemented as agreed upon in the GMMP and with the concurrence of the County and the BLM.</p> <p>The fifth annual monitoring report shall evaluate the effectiveness of the monitoring program. At that time, recommendations for modifying or eliminating the monitoring program can be presented to the BLM and County for consideration. Monitoring shall continue through the life of the ROW Grant unless the BLM and County determine that the monitoring requirements detailed in the GMMP are no longer necessary.</p>			
<p>Mitigation Measure 3.19-4: Groundwater Testing. Subsequent to the publication of the Draft PA/EIS/EIR a groundwater well test was completed for the Project (Panorama Environmental, Inc., 2014a) to obtain additional scientific data on the Soda Mountain Valley aquifer (Appendix H-4).</p>	<p>Testing and the analysis associated with the data derived during the well installation and aquifer pump test, have fulfilled the requirements of Measure 3.19-4. Therefore, Measure 3.19-4 has been removed.</p>	<p>Not applicable.</p>	<p>Not applicable.</p>
<p>Mitigation Measure 3.19-5: Construction period flood protection. The Applicant shall ensure that during construction, temporary construction-related structures constructed within a 100-year floodplain, such as roads, berms, and other facilities would be constructed so as to avoid interference with 100-year flood flows. Temporary installation of the following types of facilities shall be avoided to the extent feasible within the 100-year floodplain: temporary elevated earthen structures such as roads and berms; earthen bridges or other structures within a waterway or flood conveyance that could interfere with flood flows; dams; unnecessary ditches; and other major structures that could concentrate flood flows. Additionally, to the extent practicable, the Applicant shall ensure that the construction process proceeds in a manner so as to minimize exposure of facilities to construction period flooding. Temporary ditches and trenches (such as for pipes, wires, or other infrastructure) should be completed and backfilled as quickly as possible, and should not be left open for extended periods. Drainage infrastructure, such as flood protection berms, should be installed prior to installation of the solar arrays and other facilities on site. Other facilities that may be susceptible to flood damage during construction should be managed so as to minimize construction time of those facilities.</p>		<p>Prior to and during construction</p>	<p>BLM</p>

Mitigation Measure	Modification and Rationale	Timing for Implementation	Monitoring Agency(s)
<p>Wildland Fire</p> <p>Mitigation Measure 3.20-1: The Applicant shall prepare and implement a Fire Safety Plan to ensure the safety of workers and the public during Project construction, operation and maintenance, and decommissioning activities. The Fire Safety Plan shall be provided to the BLM and the County's Victorville Fire Protection office (VFPO) for approval before the Applicant receives a Notice to Proceed (NTP). The Fire Safety Plan shall include, but not be limited to, the following elements:</p> <ol style="list-style-type: none"> 1. All internal combustion engines used at the Project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order. 2. Once initial two-track roads have been cut and initial fencing completed, light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order. 3. Fire rules shall be posted on the project bulletin board at the contractor's field office and others areas such that they would be visible to employees. 4. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. 5. The Applicant shall make an effort to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel. 6. Smoking shall be prohibited in wildland areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation. 7. Each Project construction site (if construction occurs simultaneously at various locations) and the proposed solar plant site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires. 8. The Applicant shall coordinate with the VFPO to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site. 9. All construction workers, plant personnel, and maintenance workers visiting the plant and/or transmission lines to perform maintenance activities shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the VFPO. 10. Vegetation near all solar panel arrays, ancillary equipment, and access roads shall be controlled through periodic cutting and spraying of weeds, in accordance with the Vegetation Management Plan. 11. The BLM and VFPO shall be consulted during plan preparation and fire safety measures recommended by the agencies shall be included in the plan. 12. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations. 13. All on-site employees shall participate in annual fire prevention and response training exercises with the VFPO 14. The Applicant shall designate an emergency services coordinator from among the full-time on-site employees who shall perform routine patrols of the site during the fire season equipped with a portable fire extinguisher and communications equipment. The Applicant shall notify the BLM and County of the name and contact information of the current emergency services coordinator in the event of any change. 15. Remote monitoring of all major electrical equipment (transformers and inverters) will screen for unusual operating conditions. Higher than nominal temperatures, for example, can be compared with other operational factors to indicate the potential for overheating which under certain conditions could precipitate a fire. Units could then be shut down or generation curtailed remotely until corrective actions are taken. 16. Fires ignited on site, or off-site as a result of Project-related activities, shall be immediately reported to BLM and the VFPO. 17. The engineering, procurement, and construction contract(s) for the project shall clearly state requirements 1 through 16 of this mitigation measure. 		<p>Submit plan at least 30 days prior to construction</p> <p>Implement plan during all Project phases</p>	<p>BLM and VFPO</p>