DOCKETED	
Docket Number:	24-OPT-03
Project Title:	Soda Mountain Solar
TN #:	267973
Document Title:	Mitigation and APM Summary
Description:	This document provides a summary of the Applicant Proposed Measures (APMs) and Mitigation Measures (MM) for the proposed project.
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Organization:	Resolution Environmental
Submitter Role:	Applicant Representative
Submission Date:	12/18/2025 4:44:40 PM
Docketed Date:	12/18/2025

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Resource	**APM/Mitigation Measure Number**	**APM/Mitigation Measure**	**Cross Reference to ROD Measures**
Aesthetics	APM AES-1	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. Visual design elements to be integrated into construction plans, details, shop drawings and specifications must at a minimum include: 1. Vary the grid layout to reduce contrast caused by long straight roads. Employ an offset 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. Color treat structures to reduce contrasts with the existing landscape. The applicant shall treat surfaces of all permanent, large project structures and buildings (operations and maintenance building,	MM 3.18-1a

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		inverters, electrical enclosures, gen-tie poles, conductors, tanks, pipes, and walls) and chain-link fences visible to the public such that: (a) their colors minimize visual intrusion and contrast by blending with (matching) the existing characteristic landscape colors; (b) their colors and finishes do not create excessive glare from surface brightness; and (c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.	

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Aesthetics	APM AES-1	Following consultation with the BLM Visual Resources specialist, and other representatives as deemed necessary, the applicants shall submit for the CDFW's and BLM's review, a specific Surface Treatment Plan that will satisfy these requirements. The consultation would be in-field at the agencies' election, or as a desktop review if preferred by the agencies. The treatment plan shall include: a. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes based on the characteristic landscape. Colors will be fielded tested using the actual distances from the KOPs to the proposed structures, using the proposed colors painted on representative surfaces; b. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and pantone number; or according to a universal designation system; c. One set of color brochures or color chips showing each proposed color and finish; d. A specific schedule for completion of the treatment; and e. A procedure to ensure proper treatment maintenance for the life of the project. The applicant shall not specify to the vendors the treatment of any buildings or structures treated during manufacture or perform the final treatment on any buildings or structures treated in the field, until the applicant receives notification of approval of the treatment plan by the BLM. Subsequent modifications to the treatment plan are prohibited	MM 3.18-1a

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		without the BLM's approval for components under their respective authorities; however, the applicant may consider the agencies' failure to respond to a request for review within 60 days an acceptance of the proposal.	

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Aesthetics	APM AES-1	3. Lighting – Consistent with safety and security considerations, the applicant shall design and install all permanent exterior lighting and all temporary construction lighting such that (a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; (b) lighting does not cause excessive reflected glare; (c) direct lighting does not illuminate the nighttime sky, except for required Federal Aviation Administration (FAA) aircraft safety lighting; (d) illumination of the project and its immediate area is minimized and it complies with local policies and ordinances. Prior to construction, the applicant shall submit to BLM and CDFW a Lighting Management Plan that outlines the following: a. Construction and operational (permanent) lighting – Except as required to meet safety and security 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, safety and security reasons that created the need for nighttime lighting shall be included in the log as well. 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. c. Lighting plan – Prior to construction, 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	MM 3.18-1a

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		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 and CDFW for review and approval at least 30 days prior to construction.	

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Aesthetics	APM AES-1	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. 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. 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. 7. The distribution line shall utilize non-specular conductors and non-reflective coatings on insulators.	MM 3.18-1a

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Aesthetics	APM AES-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 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. 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. 2. Visual impact mitigation objectives and activities shall be discussed with equipment operators before construction activities begin. 3. Existing rocks, vegetation, and drainage patterns shall be preserved to the extent feasible. 4. Brush-beating or mowing or using protective surface matting rather than removing vegetation shall be employed where feasible. 5. Where not in conflict with other mitigation requirements, 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.	MM 3.18-2

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		6. If graveled surfaces are used during construction, the visual color contrast of graveled surfaces shall be reduced with approved color treatment practices. 7. No paint or permanent discoloring agents shall be applied to rocks or vegetation to indicate surveyor construction activity limits. 8. All stakes and flagging shall be removed from the construction area and disposed of in an approved facility.	

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Aesthetics	APM AES-3	Operation and Maintenance. Terms and conditions for VRM mitigation compliance 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: 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 BLM Authorized Officer. 2. Interim restoration shall be undertaken during the operating life of the project as soon as possible after disturbances. 3. Painted facilities shall be kept in good repair and repainted when color fades or flakes. 4. Color-treated solar panel backs/supports shall be kept in good repair and retreated when color fades and/or flakes.	MM 3.18-3

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Aesthetics	APM AES-4	APM AES-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 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: 1. Pre-development visual conditions, and the B-Quality scenery, 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,	MM 3.18-4

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		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.	

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Aesthetics	APM AES-4	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.	MM 3.18-4
Aesthetics	MM AES-5	Glint and Glare Mitigation and Monitoring. Consistent with Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands (BLM 2013), 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 observation points 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: 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. 2. Use solar panels made with textured glass surfaces to diffuse reflected light. If the use of textured glass panels is found not to be feasible, the plan shall describe the reason for its infeasibility. 3. Employ materials to reduce the effect of glare 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.	MM 3.18-1b

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		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. 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.	
Air Quality	APM AIR-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	APM 1

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		application of water during visible dusting episodes shall be considered sufficient to maintain compliance.	
Air Quality	APM AIR-2	The applicant shall apply best management practices (BMPs) to prevent project-related visible bulk materials transport (trackout) onto paved surfaces. BMPs may include, but not be limited to, the following: o Use of wheel-washers (or equivalent) installed at all access points and laydown areas where trackout onto paved public roads could occur. o Construction of stabilized construction site entrance/exit areas. o Implementation of regular street sweeping/cleaning of paved surfaces. o Installation of corrugated steel panels at all site exits.	APM 2
Air Quality	APM AIR-3	The applicant shall cover haul vehicles maintained paved surfaces loaded with earthen materials while operating on publicly maintained paved surfaces.	APM 3
Air Quality	APM AIR-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.	APM 4
Air Quality	APM AIR-5	The applicant shall cleanup project-related visible bulk materials transport (trackout) or spills on publicly maintained paved surfaces within 24 hours.	APM 5

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Air Quality	APM AIR-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.	APM 6
Air Quality	APM AIR-7	The applicant shall limit the speed of vehicles traveling on unpaved roads and disturbed areas to 15 miles per hour.	APM 7
Air Quality	APM AIR-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.	APM 8

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Air Quality	APM AIR-9	The applicant, when entering into construction contracts or when procuring off road equipment or vehicles for on-site construction or operations and maintenance activities, shall ensure that only new model year equipment or vehicles are obtained. An Exhaust Emissions Control Plan that identifies each off-road unit's certified tier specification, Best Available Control Technology, 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 for review and approval at least 30 days prior to commencement of construction activities. The following measures would be included with contract or procurement specifications and in the Exhaust Emissions Control Plan: o All construction diesel engines not registered under California Air Resources Board's Statewide Portable Equipment Registration Program, with a rating of 50 hp or higher shall meet the Tier 4 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in 13 CCR 2423(b)(1), unless a good faith effort demonstrates that such engine is not available for a particular item of equipment. If a Tier 4 engine is not available for any off-road equipment larger than 50 hp, a Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides and diesel particulate matter to no more than Tier 3 levels unless certified by the engine manufacturers that the use of such devices is not practical for specific engine types. o All diesel-fueled engines used in the construction of the facility shall have clearly visible tags showing that the engine meets the standards of	N/A

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		this measure. o All equipment and trucks used in the construction or operation and maintenance of the facility shall be properly maintained and the engines tuned to the engine manufacturer's specifications. o All diesel heavy construction equipment shall not idle for more than 5 minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.	

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Biological Resources	APM BIO-1	The site shall be revegetated after decommissioning according to the Final Closure Plan described in MM BIO-29 and prepared in conformance with BLM requirements at the time of decommissioning.	APM 34
Biological Resources	APM BIO-2	The applicant shall prepare and implement a Vegetation Resources Management Plan that contains the following components: • Vegetation Salvage Plans that discuss the methods that will be used to transplant cacti present within the proposed disturbance areas. Salvage and transplant methods used will be approved by the CDFW. In addition, the Vegetation Salvage Plans will also include methods that will be used to transplant special-status plant species that occur within proposed disturbance areas. • 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, and creosote bush scrub,) present within the project area that may be temporarily disturbed by construction activities. The applicant will obtain CDFW approval for any seed mixtures used for restoration. • Vegetation Salvage and Restoration Plans that will specify success criteria and performance standards. The applicant will be responsible for implementing the Vegetation Salvage and Restoration Plan according to CDFW requirements.	APM 36
Biological Resources	APM BIO-3	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	APM 38

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		clump or monotypic stand of invasive weeds. Herbicides shall not be applied within 100 feet of a special-status plant.	
Biological Resources	APM BIO-4	Only a State of California and federally certified contractor (i.e., Qualified Applicator), who is also approved by CDFW, and holds and maintains a Qualified Applicator License from California Department of Pesticide Regulation, shall be permitted to perform herbicide applications. Herbicides shall be applied in accordance with applicable laws, regulations, and permit stipulations. All herbicide applications must follow U.S. Environmental Protection Agency label instructions.	APM 39
Biological Resources	APM BIO-5	Herbicides shall not be applied during rain events, within 48 hours of a forecasted rain event with a 50% or greater chance of precipitation, or when wind velocity exceeds 10 mph (for liquids) and 15 mph for granular herbicides.	APM 40
Biological Resources	APM BIO-6	The applicant shall implement an Integrated Weed Management Plan (IWMP) to control weed infestations and the spread of noxious weeds in the study area.	APM 50
Biological Resources	APM BIO-7	After project construction, areas of temporary disturbance shall be closed and the restoration measures in the Vegetation Resource Management Plan shall be implemented.	APM 53
Biological Resources	APM BIO-8	Foundations shall 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.	APM 64

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Biological Resources	APM BIO-9	Decommissioning methods shall minimize new site disturbance and removal of native vegetation.	APM 63
Biological Resources	APM BIO-10	All special-status and rare plant (CRPR 1, 2, 3, and 4) occurrences within the project area 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 shall provide on-site mitigation (e.g., vegetation salvage) for impacts to special-status and rare plants.	APM 35
Biological Resources	APM BIO-11	Before construction of a given phase begins, the applicant shall 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 CDFW-approved biologist shall 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 shall be flagged for transplantation.	APM 35
Biological Resources	APM BIO-12	No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.	N/A

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Biological Resources	APM BIO-12	The applicant shall implement a Worker Environmental Awareness Program (WEAP) to educate workers about the environmental issues associated with the project and the MMs that will be implemented at the site, including nest awareness and non-disturbance exclusion zones.	APM 44
Biological Resources	APM BIO-13	Preconstruction clearance surveys to identify active bird nests shall be conducted within 2 weeks of ground disturbance or vegetation removal in all active work areas during the breeding season (February 1–August 31). The work area will need to be resurveyed following periods of inactivity of 2 weeks or more. Active nests shall be avoided using non-disturbance buffer zones as shown below. • Avian Awareness and Baseline Non-Disturbance Buffer Zones • Starting Distance of Awareness or Type Non-Disturbance Exclusion Zones Passerines 300 feet from active nest Raptors 500 feet from active nest Golden Eagles 1 mile and line of sight from active nest Burrowing 250 feet from active burrows during nesting Owls1 season (February 1–August 31) 160 feet from active burrows during the wintering period (September 1–January 31) • Implementation Notes: 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.	APM 46

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Biological Resources	APM BIO-14	Monitoring of any active nests within or adjacent to the work areas shall be conducted until nestlings have fledged and dispersed. Ongoing breeding-season monitoring of work areas shall be conducted throughout the duration of construction. Nest monitoring results shall be recorded in a Nest Check Form. Typically, a nest check will have a minimum duration of 30 minutes, but it may be longer or shorter, or more frequent than one check per day, as determined by the Designated Biologist (see MM BIO-7 for 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 shall 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 shall 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. Should the Designated Biologist determine project activities are causing or contributing to nest disturbance that might lead to nest failure, the Designated Biologist shall 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	APM 47

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		equipment. Nest locations, project activities in the vicinity of nests, and any adjustments to buffer areas shall be described and reported in regular monitoring and compliance reports.	
Biological Resources	APM BIO-15	Preconstruction surveys for burrows containing suitable bat roosting habitat that could be used as individual bat roosts shall be conducted in all project work areas.	APM 48

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-16	The connection from the substation to the transmission line shall be designed to meet the most recent Avian Power Line Interaction Committee guidelines to the extent practicable.	APM 49
Biological Resources	APM BIO-17	Roads, power lines, fences, and other infrastructure associated with the project shall be minimized to reduce habitat loss. Fencing will use wildlife compatible design standards.	APM 51
Biological Resources	APM BIO-18	Collector lines shall be placed underground to reduce avian collisions.	APM 52
Biological Resources	APM BIO-19	Federal and state measures for handling toxic substances shall be followed to minimize danger from spills to water and wildlife resources. Facility operators shall maintain Hazardous Materials Spill Kits on-site. Personnel shall be trained to use the Hazardous Materials Spill Kits.	APM 54
Biological Resources	APM BIO-20	The applicant shall clear vegetation outside of the bird breeding season to the maximum extent practicable. Preconstruction avian clearance surveys shall be conducted by a qualified biologist for vegetation clearing during the bird breeding season (February 1–August 31). If a nest(s) is identified in the preconstruction avian clearance surveys, a qualified monitor shall be on-site during vegetation removal in order to enforce non-disturbance buffers and stop activities as necessary should construction disturb nesting activity.	APM 55
Biological Resources	APM BIO-21	Trash shall be disposed of in covered containers and regularly removed from the site.	APM 56

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-22	Surveys for burrowing owl shall be conducted in suitable burrowing owl habitat prior to construction and if construction is suspended for 2 weeks or more. Surveys shall be performed pursuant to the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). If active burrows are found, they shall be avoided using non-disturbance buffer zones. Passive relocation shall be used as described above once the burrow is determined to be inactive.	APM 57
Biological Resources	APM BIO-23	A qualified biologist shall conduct a ground-based golden eagle clearance survey for active golden eagle nests in a 2-mile area surrounding the project, as accessible. Golden eagle clearance surveys shall be conducted annually for each year of construction during the golden eagle nesting season. If active nests are found in the study area, the applicant shall coordinate with BLM, USFWS, and CDFW to ensure that construction does not result in disturbance of the golden eagles.	APM 58
Biological Resources	APM BIO-24	Project personnel shall remove and dispose of roadkill near the study area to avoid attracting raptors and other scavengers to the site and shall regularly remove vegetation around larger facilities (such as the substation) to reduce raptor foraging.	APM 60
Biological Resources	APM BIO-25	The project shall 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.	APM 61
Biological Resources	APM BIO-26	Project personnel and visitors shall be instructed to drive at low speeds (<15 mph) and be alert for wildlife, especially in low-visibility conditions.	APM 62

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-27	Fencing shall be removed at the completion of decommissioning.	APM 65
Biological Resources	APM BIO-28	Desert tortoise exclusion fencing shall 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 fence line and a 30 foot-wide buffer shall be surveyed for desert tortoise before construction of the fence and according to USFWS protocol. Desert tortoise translocation will adhere to guidelines of the desert tortoise translocation plan for the project (see MM BIO-12). Tortoises found in the fence line study area or spotted within 50 m of the fence line study area shall be: • Assigned a USFWS identification number. • Given a health assessment. • Fitted with a transmitter. Tortoises that are too small to accept a transmitter (i.e., no transmitter is available that is 10% or less of the tortoise's body weight) shall be treated as a translocatee and held in situ. • Moved into habitat adjacent outside the fence line. The tortoise shall be moved into an empty burrow if clearance of the fence area takes place outside the tortoise active season (i.e., November–March and June–August). • Any of the moved tortoises that return to the project area before completion of fence construction shall be treated as translocatees. Desert tortoises remaining outside the fence line prior to completion of	APM 66

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		the fence shall be deemed residents. The transmitter shall be removed from the resident tortoise, and no further action shall be taken for the resident tortoises. USFWS procedures shall be followed to clear and handle the desert tortoise.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-29	The project area desert tortoise preconstruction clearance survey shall be conducted during the desert tortoise active season (April–May and September–October) unless otherwise agreed to by CEC, USFWS, and CDFW. The survey shall be conducted according to USFWS protocol and preferably during early morning hours to increase the chance juvenile tortoises are found, per the Guidelines. Any tortoise scat shall be collected on each pass of a transect, per the Guidelines. USFWS procedures shall be followed to clear and handle the desert tortoise.	APM 67
Biological Resources	APM BIO-30	The linear facilities desert tortoise preconstruction clearance survey(s) can be conducted at any time throughout the year. Linear facilities for this project include the buried collector lines between arrays and connecting to the substation. Located desert tortoises shall be undisturbed and allowed to clear the site without assistance or interference. Tortoises shall be moved if necessary to reduce the potential for harm from construction activities but shall not be moved more than 500 m in such a scenario. USFWS procedures shall be followed to clear and handle the desert tortoise.	APM 68

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-31	Data shall be collected during desert tortoise clearance surveys as described in this section. The same data shall be collected again on tortoises held in the interim in situ on the day that the tortoise is translocated from the study area. The data include: Date Time Temperature (°C) Project name Site type (project/recipient/control) Landowner (BLM) Permit/BO # Coverage # Field crew vendor Surveyor (first and last name) ID# Midline carapace length (MCL) (millimeters) Sex Universal Transverse Mercator (UTM) (Easting) UTM (Northing) Location (e.g., burrow) Transmitter manufacturer Transmitter serial # Transmitter frequency Transmitter install date	APM 69

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		Battery life (months) Status (alive/dead/lost)	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-32	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.	APM 70
Biological Resources	APM BIO-33	No construction, operation, or decommissioning activities shall occur in unfenced areas without a USFWS-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 through 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 1) with a diameter greater than 3 inches, 2) stored for one or more nights, 3) less	APM 71

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
		than 8 inches aboveground, and 4) 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.	
Biological Resources	APM BIO-34	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, CDFW, and USFWS for approval at least 30 days prior to the start of construction.	APM 72

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	APM BIO-35	A Burrowing Owl Relocation Plan shall be prepared and submitted to CDFW for approval. Burrowing owls occupying burrows on-site shall be passively relocated outside the nesting season (February 1–August 31) 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 shall 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 shall be conducted prior to construction and according to guidelines from the California Burrowing Owl Consortium (1993).	N/A
Biological Resources	APM BIO-36	Compensatory habitat mitigation shall be provided at a 1:1 ratio for impacts to suitable desert tortoise habitat during construction. A Habitat Compensation Plan shall be prepared to the approval of CDFW, USFWS, and BLM.	APM 73
Biological Resources	APM BIO-37	No pets or domestic animals shall be allowed on-site prior to or during construction, except kit fox scat detection dogs (with CDFW approval) used for preconstruction surveys or postconstruction kit fox mortality monitoring. The project will not authorize the housing or grazing of domestic animals on the project site. Feeding of animals will be prohibited to discourage the spread of non-native birds, to discourage the spread of disease and pathogens, etc.	APM 73

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-1	Best Management Practices. To reduce indirect impacts to special-status plants and wildlife that may occur in the study area, BMPs shall be implemented prior to and during construction to control dust pollution, prevent discharge of potentially harmful chemicals, and prevent changes in hydrology. BMPs may include the installation of erosion and sedimentation control devices, applying water to control dust, placing drip pans under equipment when not in use, refueling in designated areas, and containing concrete washout properly, among other practices.	N/A

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-2	Worker Environmental Awareness Program. Prior to project initiation, the Designated Biologist shall develop and implement the WEAP (APM BIO-12), which will 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: • 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. • Biology and status of the desert tortoise, golden eagle, burrowing owl, other nesting birds, desert bighorn sheep, kit fox, and American badger and measures to reduce potential effects on these species. • Actions and reporting procedures to be used if desert tortoise, burrowing owl, other nesting birds, desert bighorn sheep kit fox, or American badger are encountered. • An explanation of the function of flagging that designates authorized work areas. • Driving procedures and techniques to reduce mortality of wildlife on roads. • Discussion of the federal ESA and CESA, BGEPA, and MBTA and the consequences of non-compliance with these acts. • The importance of avoiding the introduction of invasive weeds onto the project area and surrounding areas. • A discussion of general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and	MM 3.4-1c

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		protection measures. • A review of mitigation requirements that are applicable to their work.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-3	Special-Status Plant Species and Cacti Impact Avoidance and Minimization. This measure will provide guidance on how project personnel can avoid unintended impacts to special-status plants on the project area (e.g., Utah vine milkweed) and provide for the salvage of protected cacti prior to construction. This measure includes the following requirements: • The applicant shall establish Environmentally Sensitive Areas around Utah vine milkweed that has been identified on the project area 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. • Worker Environmental Awareness Program. The WEAP (APM BIO-12; MM BIO-2) shall include training components specific to protection of special-status plants that occur on the project area. • Herbicide and Soil Stabilizer Drift Control Measures. 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 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 Global Invasive Species Team (Hillmer and Liedtke 2003), the U.S. Environmental Protection	MM 3.3-3

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		Agency, and the Pesticide Action Network Database. • Erosion and Sediment Control Measures. 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 mixtures, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan.	

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Biological Resources	MM BIO-3	• Preconstruction Vegetation Salvage. The applicant shall provide a draft Vegetation Resources Management Plan detailing the methods for the salvage and transplantation of target succulent species covered under the CDNPA. The plan shall be submitted to CDFW 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: a. Soil baseline characterization. The characterization shall be presented to CDFW prior to ground disturbance and shall include: 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). • Bulk density, along with a reference to a generally accepted method for making the determination. • 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 will contain equal contributions from at least six randomly located collection points within the soil donor area. • Organic matter content and total carbon and nitrogen content, along	MM 3.3-3

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		with a reference to generally accepted methods for making the determinations. a. Soil compaction shall be determined by measurement of bulk density in grams per cubic centimeter (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 a bulk density that exceeds 1.6 grams per cubic centimeter except where no planting is to take place. Penetrometer measurements are not a substitute for bulk density measurements. 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 area. 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% 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	

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		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. 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. 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	

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		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. 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% 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. 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: i. The location of target plants on the project area; 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;	

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		v. Considerations for storing salvaged plants or pre-planting requirements; and vi. Suggested transplantation sites. 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. Succulent transplants done during preparation of the project area shall be fully documented and serve as trials of methods to be used during plant salvage on the project area. 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. d. Seed Collection. Seed collection shall be carried out within the ROW grant area and within 10 miles of the boundaries of the project area on similar terrain, soil, exposure, slope and elevation to the project area. 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	

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		provided by "seed farming" and collection within 10 miles of the site, CDFW may approve collection from a greater distance provided other environmental factors at the collection site are good matches to the project area. Collected seed may be used to seed salvaged topsoil piles during the construction phase and after decommissioning related to restoring the project area. e. If the palo verde trees on-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, three replacement plants shall be planted in or near the project area for each affected tree and monitored following the above guidance.	

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Biological Resources	MM BIO-4	Biological Monitoring. Biological Monitor(s) shall be employed to assist the Designated Biologist in conducting preconstruction 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 references, and contact information for each prospective Biological Monitor to CDFW and USFWS for approval. To avoid and minimize effects on biological resources, the Biological Monitor(s) shall assist the Designated Biologist with the following: • 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. This also includes unfenced construction activities for desert bighorn sheep. • 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, desert	MM 3.4-1b

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		bighorn sheep, 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. • Inspect the study area for any special-status wildlife species. • Ensure that potential habitats within the construction zone are not occupied by special-status species (e.g., potential burrows or nests are inspected). • 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. • 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. • Inspect the site to ensure trash and food-related waste is placed in closed-lid containers and 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. MM BIO-5: Designated Biologist. The applicant	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-5	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 for approval in consultation with CDFW and USFWS. The Designated Biologist must meet the following minimum qualifications: • Have a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; • Have 3 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; • Have at least 1 year of field experience with biological resources found in or near the study area; • Meet the current USFWS Authorized Biologist qualifications criteria, demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; • Possess a CESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the BLM Authorized Officer, in consultation with CDFW and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the MMs.	MM 3.3-1

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-6	Fence Design and Site Permeability. Permanent site fencing installed around the project should be designed to allow for the passage of wildlife, to the extent feasible given the need for the fencing to prevent ingress by desert tortoise. Depending on the fencing material, the fence line should have gaps of approximately 4 to 6 inches accessible to wildlife other than desert tortoise and the fencing material should be knuckled back to create a smooth edge. Alternate designs may also be constructed with prior written approval from CDFW and USFWS. Regardless, the project shall ensure that any such fence meets existing specifications that have been developed to preclude accidental entanglement of desert bighorn sheep, deer, and other animals. Fencing should be sufficient to prevent desert bighorn sheep passage (e.g., 2m-2.5m tall chain-link) – should be installed at the corridor entrances between (a) the East Array and South Array 1, (b) South Array 1 and South Array 2, and (c) South Array 2 and South Array 3 on the east side (Figure 2, Project Design). Gaps of approximately 4 to 6 inches should occur at the bottom of the fence to allow small wildlife, mesocarnivores, coyote and American badger to pass under. Additionally, the project shall extend a line of project fencing to the north to connect with the wildlife exclusion fencing associated with the I-15 overcrossing structure (Figure 13, Fencing Plans of the Desert Bighorn Sheep Study). Approximately 1,640 linear feet of this can be accomplished within the existing project boundary, but the additional approximately 300 linear feet will need to be coordinated with BLM and possibly Caltrans. The project will secure the necessary encroachment	N/A

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		permits or other mechanism to continue fencing between the project boundary and the wildlife exclusion fencing associated with the I-15 overcrossing structure. Care should be taken when connecting the fences to make sure that they are physically connected or directly abut one another such that wildlife can't pass through or get stuck between them. The ultimate fencing plans should be reviewed by CDFW for final approval prior to site disturbance activities.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-7	Compliance Monitoring by the Designated Biologist. Prior to ground-disturbing activities, an individual shall be designated and approved by CDFW as a Designated Biologist (i.e., field contact representative). Designated Biologist qualifications are presented below. The Designated Biologist shall be employed for the period during which ongoing construction and postconstruction monitoring and reporting by an approved biologist is required. Each successive Designated Biologist shall be approved by CDFW. The Designated Biologist shall have the authority to ensure compliance with all measures set forth in the BO and CESA Section 2081 take authorization and with all MMs included herein, and shall be the primary agency contact for the implementation of these measures. The Designated Biologist shall have the authority and responsibility to halt any project activities that are in violation of the terms of the BO, Section 2081 take authorization, or project MMs. A list of responsibilities of the Designated Biologist is summarized below. To avoid and minimize effects to biological resources, the Designated Biologist shall: • Notify CDFW and USFWS at least 14 calendar days before initiation of ground-disturbing activities. • Immediately notify the CDFW in writing if the applicant/owner does not comply with any of the MMs or terms of the BO 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. • Ensure performance of daily compliance inspections during ongoing construction as clearing, grubbing, and grading are completed, and	MM 3.4-1a

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		submit a monthly compliance report to CDFW until construction is complete.	
Biological Resources	MM BIO-8	Speed Limits. Speed limits along all access roads outside of permanent desert tortoise fencing shall not exceed 15 mph to minimize dust during construction activities. Speed limits within permanent desert tortoise fencing shall not exceed 25 mph to minimize impacts during operation and maintenance. Nighttime vehicle traffic associated with project	MM 3.4-1d

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
		activities shall be kept to a minimum volume and speed (maximum of 15 mph) to prevent mortality of nocturnal wildlife species.	
Biological Resources	MM BIO-9	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's Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) or more current guidance provided by CDFW and USFWS. The applicant/owner shall also implement all terms and conditions described in the BO to be prepared by USFWS and CESA ITP. 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: • Desert Tortoise Fencing along I-15. If required by CDFW, to avoid increases in vehicle-related mortality from disruption of local movement patterns along the existing ephemeral wash systems, desert tortoise-proof fencing shall be installed along the existing freeway ROW fencing on both sides of I-15 for the entire east-west dimension of the project area. 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.	MM 3.4-2a

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Biological Resources	MM BIO-9	• Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoise, 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's Desert Tortoise (Mojave Population) 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 100% 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 tortoise shall be examined to assess occupancy of each burrow by desert tortoise and handled in accordance with the USFWS's Desert Tortoise Field Manual. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist in accordance with the USFWS's 2009 Desert Tortoise (Mojave Population) Field Manual (USFWS 2009). 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.	MM 3.4-2a

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		b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS's Desert Tortoise (Mojave Population) Field Manual (Chapter 8 – Desert Tortoise Exclusion Fence) (USFWS 2009). 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. 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 tortoises were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times per 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	

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		immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-9	• Desert Tortoise Clearance Surveys within Solar Arrays and Gen-tie. Clearance surveys shall be conducted in accordance with the USFWS Desert Tortoise (Mojave Population) Field Manual (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100% of the study 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 area may only be conducted when tortoises are most active (April–May or September–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 DTTP (MM 3.4-2b). The Designated Biologist, who may be assisted by the Biological Monitors, shall assess occupancy of each burrow by desert tortoise in accordance with the USFWS Desert Tortoise (Mojave Population) Field Manual (USFWS 2009). 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 tortoise in accordance with the DTTP.	MM 3.4-2a

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-9	• Monitoring Following Clearing. Following the desert tortoise clearance and removal from the project area, workers and heavy equipment shall be allowed to enter the project area 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.	MM 3.4-2a
Biological Resources	MM BIO-9	• Reporting. The Designated Biologist shall record the following information for any desert tortoise 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 the project area shall be marked and monitored in accordance with the DTTP. All collected data related to tortoise relocation shall be provided to CDFW and USFWS.	MM 3.4-2a

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-10	Desert Tortoise Translocation Plan. The applicant/owner shall develop and implement a USFWS- and CDFW-approved 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 tortoise. The goals of the DTTP shall be to relocate all desert tortoise from the project area to nearby suitable habitat; minimize impacts on resident desert tortoise outside the project area; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring. The DTTP shall follow the Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (USFWS 2011b) 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 and shall include all revisions deemed necessary by CDFW and USFWS. The final plan will be subject to modification for consistency with the CESA ITP, USFWS take authorization and/or BO conservation requirements.	MM 3.4-2b

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-11	Desert Tortoise Compliance Verification. The applicant/owner shall provide CDFW and USFWS staff with unfettered access to the project area and compensation lands under the control of the project owner and shall otherwise fully cooperate with the CDFW's efforts to verify the project owner's compliance with, or the effectiveness of, adopted MMs. The Designated Biologist shall do all of the following: • Notification. Notify CDFW at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify CDFW in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement MMs within the time periods specified in the conditions of certification;	MM 3.4-2c
Biological Resources	MM BIO-11	• 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. • 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 CDFW and USFWS during construction.	MM 3.4-2c

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Biological Resources	MM BIO-11	• Notification of Injured or Dead Listed Species. If an injured or dead federally or state-listed species is detected on or near the project area 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 whether further actions are required to protect listed species. Written follow-up notification via facsimile or electronic communication shall be submitted to these agencies within 2 calendar days of the incident and include the following information as relevant: a. Injured Desert Tortoise. If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist or 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, 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. 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 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.	MM 3.4-2c

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		1. Final Listed Species Mitigation Report. The Designated Biologist shall provide CDFW 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 to 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 MMs 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. 2. Stop Work Order. CDFW 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.	

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Biological Resources	MM BIO-12	Desert Tortoise Compensatory Mitigation: To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation consistent with federal requirements, adjusted to reflect the final project footprint. The acreage for mitigation of desert tortoise habitat will be at a 1:1 ratio. For the purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the project, including all project linears, as well as undeveloped areas inside the project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the project owner shall acquire, protect, and transfer 1 acre of desert tortoise habitat for every acre of habitat within the final project footprint, and provide associated funding for the acquired lands, as specified below. In lieu of acquiring land 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. 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 USFWS and CDFW: • Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall: a. be within the Western Mojave Recovery Unit, or, with prior USFWS and CDFW approval, within the Eastern Mojave Recovery Unit as defined in the 2011 Revised Recovery Plan (USFWS 2011b), with potential to	MM 3.4-2d

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		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; b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed; c. be prioritized near larger blocks of land that are either already protected or planned for protection, such as Desert Wildlife Management Areas within the Western Mojave Recovery Unit (or nearby portions of the Eastern Mojave Recovery Unit with prior USFWS and CDFW approval) or which could feasibly be protected long term by a public resource agency or a non-governmental organization dedicated to habitat preservation; d. be connected to lands with desert tortoise habitat equal to or better quality than the project area, ideally with populations that are stable, recovering, or likely to recover; 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; f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and h. have water and mineral rights included as part of the acquisition, unless BLM and CDFW, in consultation with CDFW and USFWS, agree in writing to the acceptability of the land. • Review and Approval of Compensation Lands Prior to Acquisition. The	

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		project owner shall submit a formal acquisition proposal to 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 and CDFW in consultation with USFWS shall be required for acquisition of all compensatory mitigation parcels.	

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Biological Resources	MM BIO-12	• Compensation Lands Acquisition Requirements. The project owner shall comply with the following requirements relating to acquisition of the compensation lands after BLM, in consultation with CDFW and USFWS, have approved the proposed compensation lands: a. Preliminary Report. The project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by BLM and CDFW, in consultation with USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board. b. Title/Conveyance. The project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the BLM and CDFW. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit 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.	MM 3.4-2d

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		c. Initial Habitat Improvement Fund. The project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code Section 65965) and if it meets the approval of CDFW and BLM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee. d. Property Analysis Record. Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in perpetuity management of the acquired mitigation lands. e. Long-term Maintenance and Management Fund. 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. 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. f. Interest, Principal, and Pooling of Funds. 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	

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		following conditions: i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands. ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by 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. iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a BLM- and CDFW-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW.	

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		g. Other expenses. In addition to the costs listed above, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs; expenses incurred from other state agency reviews; overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures. h. Mitigation Security. The project owner shall provide financial assurances 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 MMs 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. i. NFWF REAT Account. The project owner may elect to fund the acquisition and initial improvement of compensation lands through	

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		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. 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.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-13	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: • Speed limits identified in MM BIO-8 shall continue to be applied during operation and maintenance. • Pedestrian access outside the limits of the designated access/maintenance roads is permitted year-round as long as no ground-disturbing activities take place. • 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.	MM 3.4-5a
Biological Resources	MM BIO-14	Mojave Fringe-toed Lizard Protection Measures. A qualified biologist will conduct a focused survey for Mojave fringe-toed lizard prior to ground disturbance in suitable habitat (aeolian sand deposits) within all active work areas. Two survey replicates will be performed during the Mojave fringe-toed lizard active season (March–October) during appropriate weather conditions. Qualified biologists will walk transects spaced 10m apart throughout areas with suitable habitat within the study area. Detections of Mojave fringe-toed lizard will be recorded using a GPS unit. If Mojave fringe-toed lizards are not detected, then no further action is needed. If Mojave fringe-toed lizards are found, then a pre-construction survey should be conducted no more than one week before ground disturbance begins, and any Mojave fringe-toed lizards should be moved	N/A

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		to suitable habitat south of the Project area where the species was confirmed to be present.	

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Biological Resources	MM BIO-15	Avian Monitoring and Mitigation Program. An Avian Monitoring and Mitigation Program (AMMP) shall be initiated and approved by the BLM in consultation with CDFW and USFWS prior to construction and continue for at least 5 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 postconstruction monitoring and adaptive management provisions of Region 8 Interim Guidelines for the Development of a Project-specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities (USFWS 2010), 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: • 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. • Avian and bat mortality and injury monitoring that includes: 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	MM 3.4-1h

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		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-mph 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. • All postconstruction mortality monitoring studies included in the AMMP shall be performed by a third party contractor for 5 years following commercial operation and approval of the AMMP by the BLM. At the end of the 5-year period, the BLM shall determine whether the survey program shall be continued. • An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce levels	

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		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 or the use of noise deterrents). 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 BGEPA, ESA, and CESA as well as MMs 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.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-16	Avoid Disturbance to Nesting Birds. Vegetation clearing shall take place outside of the general avian breeding season (February 15–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 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) determines the nest is no longer active or the nest fails. Based on observation of the individual birds' tolerance to human activity, this buffer may be reduced by a qualified biologist. Encroachment into the buffer may occur at the discretion of a qualified biologist. The Designated Biologist/Biological Monitor(s) shall submit the results of the preconstruction nesting bird surveys to 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.	MM 3.4-4
Biological Resources	MM BIO-17	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.	MM 3.4-1e

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-18	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 Region 8 Interim Guidelines for the Development of a Project-specific Avian and Bat Protection Plan for Solar Energy Plants and Related Transmission Facilities (USFWS 2010). The applicant/owner shall submit the BBCS to the CDFW 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 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 postconstruction to include nest management and postconstruction 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.	MM 3.4-1g

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Biological Resources	MM BIO-19	Burrowing Owl Protection Measures. No more than 14 days prior to the start of ground disturbance, a preconstruction survey for burrowing owls in conformance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012) shall be completed within suitable habitat at every work area and within a 150-m 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 preconstruction 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: • Unless otherwise authorized by BLM and CDFW, no disturbance shall occur within 160 feet (50 m) of occupied burrows during the non-breeding season (September 1–January 31) or within 650 feet (200 m) during the breeding season (February 1–August 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans (developed in accordance with CDFW protocol for burrowing owls) by CDFW and receipt of formal written approval from CDFW authorizing the eviction. A Burrowing Owl Mitigation and Monitoring Plan following the guidance in the CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) shall be submitted to the BLM's Authorized Officer and CDFW for review and approval prior to passive relocation. • In the event that an occupied burrow cannot be avoided, 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	MM 3.4-1f

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		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 shall be submitted to the BLM, and CDFW for review and approval prior to passive relocation. • Occupied burrows shall not be disturbed during the nesting season (February 1–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 CDFW 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. • Unless otherwise authorized by CDFW, a 650-foot buffer within which no activity will be permissible shall be maintained between project activities and nesting burrowing owls during the nesting season. This protected area shall remain in effect until August 31 or at CDFW's discretion and, based on monitoring evidence, until the young owls are foraging independently. • If accidental take (disturbance, injury, or death of owls) occurs, the Designated Biologist shall be notified immediately. • 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	

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		energy facilities would not pose a mortality risk. Acquisition of habitat shall be consistent with the CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 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 and CDFW. 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 CDFW. • The approved biologist shall remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular (monthly) schedule throughout construction to ensure that the project is in compliance with the MMs. • Employees and contractors shall look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own or until it is removed by the approved biologist. No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable.	

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Biological Resources	MM BIO-20	American Badger and Desert Kit Fox Protection. To avoid direct impacts to American badger and desert kit fox, preconstruction surveys shall be conducted for these species concurrently with the desert tortoise surveys. Surveys shall be conducted as described below: • Biological Monitors shall perform preconstruction 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. • 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. • Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. • If no tracks are observed in the tracking medium or no photos of the target species are captured after 3 consecutive nights, the den shall be excavated and backfilled by hand. • If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. • If an active natal den is detected on the site, the BLM Authorized Officer and CDFW shall be contacted within 24 hours to determine the	MM 3.4-1i

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		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. • The following measures are required to reduce the likelihood of distemper transmission: 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 whether the collection of necropsy samples is justified.	

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Biological Resources	MM BIO-21	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: • Limit Area of Disturbance. 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 area. Parking areas and 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. • Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction. • Minimize Traffic Impacts. Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project area, and cross-country vehicle and equipment use outside designated work areas shall be prohibited. • Monitor During Construction. 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	MM 3.3-2

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		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. • Minimize Impacts of Staging Areas. Staging areas for construction on the project area shall be within the area that has been fenced with desert tortoise exclusion fencing. For construction activities outside of the solar project area, 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 project area shall maintain a minimal disturbance footprint, avoid jurisdictional wetlands, and avoid disturbance to native plant communities whenever possible. • Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces (per MM 3.2-1) shall be non-toxic to plants and wildlife. • Implement Erosion Control Measures. All erosion control measures promoted by the Lahontan Regional Water Quality Control Board (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 area 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	

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		associated with generation of fugitive dust, surface application of water would be employed during construction and operation and maintenance activities. • Monitor Ground-Disturbing Activities Prior to Preconstruction Site Mobilization. If preconstruction 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.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-21	• Revegetation of Temporarily Disturbed Areas. 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 and CDFW for review and approval at least 30 days prior to the start of ground-disturbing activities. Temporarily disturbed areas within the project area 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: a. At least 80% 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% relative to pre-disturbance conditions.	MM 3.3-2

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Biological Resources	MM BIO-21	• Integrated Weed Management Plan. This measure provides further detail and clarifies requirements for the applicant's draft IWMP. Prior to beginning construction on the project, the applicant shall prepare, circulate to 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 to prevent the spread of existing invasive species and the introduction of new invasive species to the project area. 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 2008-2012 National Invasive Species Management Plan (National Invasive Species Council 2008). 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. The BLM-approved IWMP shall include: 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 Herbicide Use Standard Operating Procedures provided in Appendix B of the Record of Decision for the Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement (BLM 2007);	MM 3.3-2

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		c. Monitoring and reporting standards annually during construction and for 3 years following the completion of construction to describe trends 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 3 years of postconstruction monitoring. Copies of these reports will be provided to BLM for review and comment. BLM will use the results of these reports to determine whether any additional monitoring or control measures are necessary. Weed control will be ongoing on the project area for the life of the project, but plan success will be determined by BLM after the 3 years of operations monitoring through the reporting and review process. Success criteria will be defined as having no more than a 10% increase in a weed species or in overall weed cover in any part of the project area.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-22	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 vegetation communities within the project area. The Final Closure Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall cover the estimated cost as though BLM were to contract with a third party to decommission the project and reclaim the project area. The plan shall be subject to review and revisions from the BLM Authorized Officer in consultation with USFWS and CDFW.	MM 3.3-5
Biological Resources	MM BIO-23	Artificial Water Sources. The project will design and install at least five new artificial water sources for desert bighorn sheep to use. The location, design, and method of installations will be determined in cooperation with CDFW and BLM and the ultimate plan will be approved by CDFW and BLM. The locations may be on private or public lands but must be located within 5 miles of the project boundary to mitigate this metapopulation. Because the I-15 wildlife overcrossing will be installed adjacent to the site, water structure installations should occur on both sides on I-15 with a possible preference for one proximate to the overcrossing structure. The project shall establish a non-wasting endowment to monitor and maintain the water features in perpetuity.	MM 3.4-3a

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-24	Compensatory Mitigation. If MM-BIO-12 (Desert Tortoise Compensatory Mitigation) is adhered to and occurs within approximately 1 kilometer of desert bighorn sheep-occupied or CDFW-identified/modeled desert bighorn sheep habitat, then no additional compensatory habitat mitigation would be required as the acquired habitat would also satisfy the foraging needs of desert bighorn sheep. However, if the mitigation lands acquired for MM-BIO-12 do not satisfy this requirement, then separate compensatory mitigation for loss of desert bighorn sheep foraging habitat (i.e., all lands east of I-15 that are fenced in) at a 1:1 ratio meeting all of the other requirements (i.e., requirements for acquisition, initial improvement, and long-term management of compensation lands) and protections afforded under MM-BIO-12 will be required.	N/A
Biological Resources	MM BIO-25	Mitigation and Monitoring Plan. Prior to site disturbance, the project will prepare a desert bighorn sheep mitigation and monitoring plan. The plan will be approved by CDFW and BLM. This plan will require monitoring of wildlife crossings, fencing effectiveness, water sources, and all other implemented mitigation measures for a minimum of 8 years with an annual monitoring report provided to CDFW by January 31, and a final report covering the entire monitoring period (i.e., at least 8 years) by January 31st of the final year. Components of this requirement may be modified if already covered by other monitoring efforts (e.g., Brightline, Caltrans). The plan will include the methods for monitoring, identify what is being monitored, identify the goals of the measures, methods for determining the effectiveness of the measures, and remedial triggers and measures if the mitigation does not meet the goals.	N/A

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Biological Resources	MM BIO-26	Limited Operating Period. Noises greater than 85 A-weighted decibels (dBA) maximum sound level (Lmax) will not be allowed within 500 meters of the hinge point (10% slope line) between December 1 and June 30. If loud work must occur, even briefly, then the project must get CDFW concurrence that the desert bighorn sheep lambing period is done or verify, in coordination with CDFW, that there are no desert bighorn sheep on the facing slope within a distance that would be expected to be subject to an 85 dBA Lmax sound level. If the project believes that they may need to ultimately perform loud work during the lambing period, then they shall coordinate with CDFW early (i.e., ideally as soon as possible, but minimally before the lambing period) to determine how much additional desert bighorn sheep-specific monitoring will be needed for CDFW to evaluate whether the request is feasible. Simply monitoring a week or two in advance will not provide enough data to perform the evaluation.	N/A
Biological Resources	MM BIO-27	Work Boot Decontamination. All construction personnel will be trained on the importance of and procedures for decontaminating boots to prevent transmission of disease from domesticated sheep and goats to desert bighorn sheep. In addition, all quarry workers who have potential contact with domesticated sheep and/or goats (for example at farms, fairs, etc.) will be identified and shall decontaminate work boots prior to entering the project area. Decontamination shall involve scrubbing the soles of work boots with a 10% bleach solution to remove all organic matter and kill pathogens. Alternatively, footwear may be changed to	N/A

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
		ensure that potentially contaminated footwear does not enter any quarry area.	
Cultural Resources	APM CUL-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.	MM 3.6-1

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Cultural Resources	APM CUL-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.	MM 3.6-2
Cultural Resources	APM CUL-2	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.	MM 3.6-2

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Cultural Resources	APM CUL-2	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 prior to implementation. The BLM shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed 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.	MM 3.6-2
Cultural Resources	APM CUL-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	MM 3.6-3

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
		that contain human remains through Project redesign shall be the preferred protection strategy.	
Geology and Soils	APM GEO-1	After construction completion, the BLM shall monitor disturbed areas where clearing, grubbing, and cut-and-fill shall be compacted once construction is complete for greater resistance to wind erosion.	APM 13
Geology and Soils	APM GEO-2	During construction, 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.	APM 11
Geology and Soils	APM GEO-3	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.	APM 12

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-4	The project stormwater pollution prevention plan or best management practices (BMP) plan required by Lahontan Regional Water Quality Control Board (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 by a watershed specialist, hydrologist, and/or engineer from each lead agency before implementation. Reports shall be submitted 30 days prior to ground-disturbing activities. 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).	MM 3.7-1
Geology and Soils	APM GEO-4	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 APM BIO-28, 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	MM 3.7-1

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
		fencing that creates substantial excess soil shall have straw wattles or other measures installed to prevent soil transport.	
Geology and Soils	APM GEO-4	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. 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.	MM 3.7-1

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-5	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 CBC. 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.	MM 3.7-2

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-6	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: 1. A preconstruction 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.	MM 3.7-4
Geology and Soils	APM GEO-7	A Project Paleontologist listed as a Principal Investigator on a current California BLM Permit for Paleontological Investigations who meets or exceeds the standards of the BLM will be retained to oversee the execution of all paleontological mitigation measures. The Project Paleontologist shall obtain a curatorial arrangement with a qualified repository prior to construction in the event of significant paleontological resource discoveries during construction.	MM 3.12-3

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-8	The Project Paleontologist shall develop Worker Environmental Awareness Program training to educate the project personnel on the legal requirements for preserving fossil resources, the recognition of the types of paleontological resources that could be encountered within the requested right-of-way boundary, and the procedures to be followed in the event of a fossil discovery. This training program shall be given by the Project Paleontologist or their designee to the crew before ground-disturbing work commences and shall include handouts to be given to new workers as needed.	MM 3.12-3
Geology and Soils	APM GEO-9	The Project Paleontologist will develop a comprehensive paleontological resources monitoring and mitigation plan (PRMMP) that incorporates the latest project description, engineering plans, and project site. The PRMMP will consider the results of previous paleontological resources assessments, including but not limited to the results of the geologic map review, geotechnical investigation, scientific literature review, museum records searches, reconnaissance surveys, and the accepted provisional paleontological sensitivity classification. The PRMMP will specify locations and depth thresholds that require paleontological monitoring during ground-disturbing activities. The PRMMP will discuss paleontological monitoring of ground-disturbing activities in previously undisturbed sediments identified as having moderate or higher sensitivity, whether present at the surface or anticipated to be present at depth in the subsurface. Geologic units of low and very low paleontological sensitivity, as well as all previously disturbed sediments, regardless of depth, should not be subject to paleontological monitoring	MM 3.12-3

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		unless anticipated to be underlain by previously undisturbed geologic units of relatively higher paleontological sensitivity that could be impacted by earthwork activities at depth. Appropriate mitigation methods may include full-time paleontological monitoring, screening of sediment samples for small fossils, or additional field surveys in the event of changes to the project site boundaries.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-9	Monitoring will be conducted by a BLM-approved paleontological monitor working under the supervision of a BLM-permitted Field Agent or BLM-permitted Principal Investigator (i.e., the Project Paleontologist) in the field, with the overall implementation of the PRMMP overseen by a BLM-permitted Principal Investigator. If field observations of surface or subsurface geologic conditions during construction activities would indicate a differing paleontological sensitivity ranking than that previously assigned, the Project Paleontologist may consult with the BLM, the California Department of Fish and Wildlife (CDFW), other relevant overseeing agencies, and Soda Mountain Solar, LLC, to recommend adjustments to the level of monitoring in response to subsurface conditions. Full-time (or on-site) monitoring can be reduced to part-time inspections (or spot checks) or ceased entirely if this is determined adequate by the Project Paleontologist and approved by all parties. This change can be done verbally and then documented via email or another written format to the BLM, CDFW, other relevant overseeing agencies, and Soda Mountain Solar, LLC. The paleontological monitor will have authority to temporarily divert activity away from exposed fossils to evaluate the significance of the find and, should the Project Paleontologist or Field Agent determine that the fossils are potentially significant, professionally and efficiently recover the fossil specimens for laboratory evaluation, and collect associated data following the procedures and guidelines of the BLM (2008a) and in accordance with the requirements stipulated in the California BLM Permit for Paleontological Investigations and Fieldwork Authorization permit(s).	N/A

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		Nonsignificant fossils will be documented and recorded in the field but not collected. Any potentially significant fossil that is collected for further evaluation will be returned to the discovery site or retained for educational purposes if after laboratory analysis it is determined to be a nonsignificant resource. The disposal of the fossil will depend on the requirements of the agency administering the land on which the fossil was discovered. Paleontological monitors will record pertinent geologic and geographic data from any fossil localities.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-10	In the event of a fossil discovery, whether by the permitted and approved paleontological field staff or a member of the construction crew, all work will cease in a 50-foot radius of the find while the Project Paleontologist or Field Agent assesses the significance of the fossil and documents its discovery. Should the Project Paleontologist or Field Agent determine that the fossil locality is potentially significant, it will be salvaged following the procedures and guidelines of the BLM (BLM 2008a) and in accordance with the requirements stipulated in the California BLM Permit for Paleontological Investigations and Fieldwork Authorization permit(s). Nonsignificant fossils will be documented and recorded in the field but not collected. Potentially significant fossils that were collected in the field that were determined to be nonsignificant after laboratory analysis will be returned to the site or retained for educational purposes (depending on the requirements of the overseeing agency administering the land on which the fossil was discovered). Significant fossils will be prepared to the point of morphological identification and/or taxonomic identification to facilitate the requirements of the curation in an accredited repository pre-approved by the BLM, CDFW, and/or another overseeing agency.	MM 3.12-4

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Geology and Soils	APM GEO-11	Upon conclusion of ground-disturbing activities, the Project Paleontologist will prepare a final report detailing the methods and results of implementing the PRMMP, including full documentation of scientifically significant fossils found, significance assessment of those fossils, repository details for significant fossils, and any recommendations for future work within the project site. If paleontological resources are curated, the final monitoring report and any associated data pertinent to the curated specimen(s) should be submitted to the designated repository. A copy of the final monitoring report should be filed with the BLM, CDFW, and/or another overseeing agency.	MM 3.12-3

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Hazards & Hazardous Materials	APM AIR-1	Fugitive Dust Control Plan. The applicant shall prepare and implement a Fugitive Dust Control Plan to address fugitive dust emissions during project construction, operation, maintenance, and future decommissioning. The plan shall include measures to minimize fugitive dust emissions from development of laydown and staging areas, site grading, vegetation management, and installation of all project facilities through postconstruction cleanup. The applicant shall take every reasonable precaution to prevent all airborne fugitive dust plumes from leaving the project and to prevent visible particulate matter from being deposited upon public roadways. The applicant shall submit the plan to Mojave Desert Air Quality Management District for review and approval no less than 60 days prior to the start of construction. The applicant shall incorporate the plan into all contracts and contract specifications for construction work. The Fugitive Dust Control Plan shall identify a Dust Control Supervisor that shall have the authority to expeditiously employ sufficient dust mitigation measures. The Dust Control Supervisor shall be on the site or available on-site within 30 minutes during working hours and shall have the authority to implement enhanced (contingency) measures if dust plumes are visible beyond the property line, which indicates that existing mitigation measures are not resulting in effective mitigation. The following measures would be included within the plan: • During construction, all unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent or watered two times daily or as frequently as necessary to minimize fugitive dust generation.	N/A

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		Non-water-based soil stabilizers shall be as efficient as or more efficient for fugitive dust control than California Air Resources Board-approved soil stabilizers and shall not increase any other environmental impacts, including loss of vegetation, adverse odors, or emissions of ozone precursor reactive organic gases or volatile organic compounds. • For long-term site operations, the applicant shall establish a Site Operations Dust Control Plan, which includes all applicable fugitive dust control measures identified for operations activities. The Site Operations Dust Control Plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads, shall restrict vehicular access to established unpaved travel paths within the project boundaries, and shall include the long-term inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. • The main access roads through the site shall be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction. Delivery, laydown, and staging areas for construction or O&M supplies shall be paved or treated prior to taking initial deliveries. • Grading and earthwork activities, including vegetation removal, cut and fill movement, and soil compacting, shall be phased across the site to minimize the amount of exposed or disturbed area on any single day. • No vehicle shall exceed 15 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do	

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		not create visible dust emissions. • Visible speed limit signs shall be posted at the construction site entrances. • All construction equipment vehicle tires shall be cleaned free of dirt prior to entering paved roadways to prevent track-out from extending 25 feet or more in cumulative length from the point of origin from an active operation. Actions, including but not limited to sweeping sealed roads, use of stabilized construction/facility entrances, and, if needed, using one or more entrance/exit vehicle tire wash apparatuses, shall be taken to prevent project-related track-out. • All unpaved exits from the construction site shall be graveled or treated to prevent track-out onto public roadways. • All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris. • At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads to access the construction site or staging areas shall be swept as needed when dirt or runoff resulting from the construction activities is visible on the paved public roadway.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Hazards & Hazardous Materials	APM BIO-21	Use of chemicals, fuels, lubricants, or biocides will comply with all local, state, and federal regulations. This is necessary to minimize the possibility of contamination of habitat or primary or secondary poisoning of badgers and other predators utilizing adjacent habitats, and the depletion of American badger prey. All uses of such compounds should observe label and other restrictions mandated by the EPA, California Department of Food and Agriculture, and other state and federal legislation. If rodent control must be conducted, the use should be restricted to interiors of buildings and zinc phosphide should be used because of the lower risk of poisoning burrowing mammals.	N/A

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Hazards & Hazardous Materials	APM FIRE-1	The applicant shall prepare and implement a Fire Management and Prevention Plan to ensure the safety of workers and the public during construction, O&M, and future decommissioning activities for the project. The owner must provide the Fire Management and Prevention Plan to the BLM for review and approval and to the San Bernardino County Fire Department for review and comment before construction. The Fire Management and Prevention Plan shall include, but not be limited to, the following elements: • Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, and hot work restrictions. • Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days. • All internal combustion engines used at the project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order. • 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. • Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. • Equipment parking areas and small stationary engine sites shall be cleared of all flammable materials. • Smoking shall be prohibited in all vegetated areas and within 50 feet of	MM 3.20-1

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		combustible materials storage and shall be limited to paved areas or areas cleared of all vegetation. • The construction site (if construction occurs simultaneously at various locations) shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires. • The applicant shall coordinate with the BLM and the San Bernardino County Fire Department to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the project site. • All construction workers, plant personnel, and maintenance workers visiting the plant and/or transmission lines to perform maintenance activities shall receive training on fire prevention procedures, 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 BLM and the San Bernardino County Fire Department. Fire prevention procedures shall be included in the project's Worker Environmental Awareness Program (Mitigation Measure BIO-2). • 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 Weed Management Plan. • The BLM and the San Bernardino County Fire Department shall be consulted during plan preparation and fire safety measures recommended by these agencies included in the plan. • The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations. • All on-site employees shall participate in annual fire prevention and	

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		response training exercises with the BLM and the San Bernardino County Fire Department. • The plan shall list all applicable wildland fire management plans and policies established by state and local agencies and demonstrate how the project will comply with these requirements. • The applicant shall designate an emergency services coordinator from among the fulltime 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 the San Bernardino County Fire Department of the name and contact information of the current emergency services coordinator in the event of any change. • 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. • Fires ignited on-site shall be immediately reported to the BLM and the San Bernardino County Fire Department. • The engineering, procurement, and construction contract(s) for the project shall provide reference to or clearly state the requirements of this measure.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Hazards & Hazardous Materials	APM HAZ-1	An Environmental Inspection and Compliance Monitoring program and plan for construction and operation will be developed and implemented to ensure that hazardous materials are properly stored and potentially hazardous waste is properly disposed of. A Project Environmental Manager will be designated to oversee the program and plan. All contractors and employees will be educated about hazardous materials storage, waste sorting, appropriate recycling storage areas, and reduction of landfill waste. The Environmental Inspection and Compliance Monitoring program and plan shall include, but not be limited to, the following elements: • On-site fueling specifications. 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 in areas with secondary containment, unless secondary containment is built into the tank. • Conductor installation guidance. During conductor installation, guard structures consisting of temporary H-frame poles shall be erected over any natural or human-made obstacles to shield them from falling objects. • Transformer inspection. 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.	APM 23, APM 24, APM 27

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Hazards & Hazardous Materials	APM HAZ-2	A Hazardous Materials Management Plan will be prepared, and all construction crews, contractors, and operations crews will be briefed on the plan prior to starting work on the project. All fuels, fluids, and components with hazardous materials/wastes will be handled in accordance with applicable regulations. All such materials shall be kept in segregated storage with secondary containment as necessary. MSDSs for all hazardous materials stored on-site shall be retained on-site during project construction and operation. The project will maintain all records of storage and inspection and will provide for proper off-site disposal.	APM 22

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Hazards & Hazardous Materials	APM HAZ-3	Health, Safety, and Noise Plan. A Health, Safety, and Noise Plan shall be prepared in compliance with all OSHA and Cal OSHA guidelines. Prior to start of construction, all construction crews and contractors shall be briefed on the plan prior to starting work on the project. The plan shall address health and safety issues associated with normal and unusual (emergency) conditions and shall include a respiratory protection program. The plan shall include, but not be limited, to the following information and guidance: • Environmental health and safety protocol (including, but not limited to, hazards of valley fever, including the symptoms, proper work procedures, when and how to use personal protective equipment, and informing supervisors of suspected symptoms of work-related valley fever) • An emergency response plan • Worker Education and Awareness Program training, which would include environmental, cultural, health, and safety training. • Noise/ear protection protocol • First aid training • Fire protection and extinguisher maintenance, guidance, and documentation Disposal of hazardous materials and waste guidance in accordance with local, state, and federal regulations.	APM 25, APM 26

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Hydrology and Water Quality	APM HWQ-1	Prior to site mobilization, the applicant shall submit a Drainage, Erosion, and Sedimentation Control Plan (DESCP) to the CDFW and the BLM for managing stormwater during project construction and operations. The DESCP must ensure proper protection of water quality and soil resources, address exposed soil treatments in the solar fields for both road and non road surfaces, and identify all monitoring and maintenance activities. The plan must also cover all linear project features such as the proposed generation-tie line. The DESCP shall contain, at a minimum, the elements presented below that outline site management activities and erosion and sediment-control BMPs to be implemented during site mobilization, excavation, construction, and postconstruction (operating) activities. Elements of the DESCP: • Vicinity Map: A map(s), at a minimum scale of 1 inch to 500 feet, shall be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, drainage concentration points, and sensitive areas. • Site Delineation: All areas subject to soil disturbance for the proposed project shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures and drainage facilities. • Clearing and Grading Plans: The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying	N/A

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		in proposed contours with existing topography. • Clearing and Grading Narrative: The DESCP shall include a table with the estimated quantities of material excavated or filled for the site and all project elements, whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported. • Erosion Control: The plan shall address exposed soil treatments to be used during construction and operation, including specifically identifying all chemical-based dust palliatives, soil bonding, and weighting agents appropriate for use that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion, including the application of chemical dust palliatives after rough grading to limit water use. • Best Management Practices Plan: The DESCP shall identify on the topographic site map(s) the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control stormwater runoff and sediment transport. • Best Management Practices Narrative: The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used before initial grading, during excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule shall include postconstruction maintenance of structural-	

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		control BMPs, or a statement provided about when such information would be available.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Hydrology and Water Quality	APM HWQ-2	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.	APM 20
Hydrology and Water Quality	MM HYD-1	**MM HYD-1: Fluvial Geomorphic Stormwater Design:** Prior to project construction and concurrent with final engineering, the project applicant shall prepare and submit a Final Fluvial Geomorphic Stormwater Design Plan (FGSDP) to the California Energy Commission for review and approval. The FGSDP shall be prepared and stamped by a licensed civil engineer or qualified fluvial geomorphologist with demonstrated experience in natural channel design. The FGSDP shall incorporate fluvial geomorphic design principles to both preserve and create stable, self-sustaining stream channels and floodplains that maintain and/or mimic natural hydrologic and sediment transport processes. At a minimum, the FGSDP shall include: 1. Hydrologic and Hydraulic Modeling: Quantitative modeling demonstrating that the existing and proposed channel dimensions, slope, roughness, and floodplain geometry maintain or restore the natural balance between flow regime, sediment transport, and channel form under design storm conditions. Modeling shall comply with all applicable local, state, and federal hydrology requirements, including peak flow attenuation and water quality treatment standards. 2. Sediment Transport Analysis: A detailed sediment transport evaluation demonstrating that the design will achieve long-term geomorphic stability, minimize erosion and deposition hazards,	

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		and avoid the need for routine structural maintenance. The analysis shall document sediment supply assumptions, boundary conditions, and modeled performance. 3. Design Features: Specific engineered elements that implement the fluvial geomorphic principles identified in Attachment 1, including, but not limited to, bankfull channel geometry, floodplain benches, energy dissipation features, riparian roughness treatments, and grade-control structures where necessary to ensure long-term stability. 4. Performance Standards: The design shall result in a channel and floodplain system that: o Maintains lateral and vertical stability under the 2-, 10-, and 100-year storm events; o Prevents excessive scour, headcutting, or over-widening; o Supports natural sediment transport continuity; and o Does not increase downstream erosion or flooding risk compared to existing conditions. 5. Implementation Requirements: All grading, construction, and restoration activities shall be completed in accordance with the approved FGSDP. Any field modifications required due to site conditions shall be reviewed and approved by the California Energy Commission prior to implementation to ensure consistency with the performance standards above.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Land Use and Planning	APM LU-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.	MM 3.9-1
Land Use and Planning	APM LU-2	Prior to issuance of the Notice-To-Proceed, the Applicant shall provide 100 percent design drawings to the BLM for review and approval.	MM 3.9-2
Noise	APM N-1	Construction and decommissioning activities associated with the operation and maintenance buildings and pile driving within 1.5 miles 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.	MM 3.11-1
Recreation	APM REC-1	Travel Management Area Maps for the project site showing open, closed, and limited travel routes and open off-road vehicles 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.	MM 3.13-1

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Transportation	APM TRA-1	Construction Traffic Management Plan: The applicant should prepare a Construction Traffic Management Plan (CTMP) for project construction to minimize adverse effects of project construction traffic. The CTMP may be prepared in consultation with the County of San Bernardino Public Works Department or Caltrans prior to construction activities and identify the following: • A breakdown of the number, type, capacity, and dimensions of the construction vehicles that would service the project site • An estimate of the average daily or weekly number of vehicles per vehicle type during each major phase of the work • Routing of passenger/worker vehicles, delivery vehicles, and excavation and construction vehicles o Review of site access as well as recommendations of signage and markings as needed so accessibility to the Shell Oil gas station is not affected o Enforcement of routing o Delivery hour restrictions, if applicable o Traffic control methods and when each is required o A contact for complaints and how complaints are to be addressed Traffic control shall be implemented during grading and construction of the project's main access point from Rasor Road and when large deliveries in wide-load vehicles or a high volume of deliveries occurs. Traffic control may include escort vehicles for wide loads, signage, and/or flaggers. Traffic control should be consistent with the requirements of the Manual of Uniform Traffic Control Devices (Federal Highway	APM 31

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		Administration 2023). All roadways should always be open to emergency personnel. Under the proposed plan, the project site would be fenced off with vehicular access via a gate off Rasor Road. With APM TRA 2 the applicant would minimize the adverse effects of project construction traffic on access to the Rasor OHV recreation area.	

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Transportation	APM TRA-2	Recreationalist Access: The proposed solar array areas would be fenced and unavailable to recreationalists. The arrays would block access to Arrowhead Trail Road, which is designated as a closed road by BLM. Rasor Road would remain along the southern boundary of the project site and maintain public access to the Rasor OHV recreation area. Road signage notifying recreationalists of road closures and alternate routes would be installed as needed. Rasor Road would be graded but remain unpaved. The road would conform to BLM specifications and would be approximately 26 feet wide and 2.85 miles long.	N/A
Utilities and Service Systems	APM USS-1	Waste Recycling Plan (WRP). Prior to issuance of a notice to proceed, the project applicant shall submit a WRP to the California Department of Fish and Wildlife and the BLM. At a minimum, the WRP must identify the materials (e.g., solar panels, cardboard, concrete, asphalt, wood) that will be generated by construction and development; the projected amounts of each; the applicable state and local laws and regulations governing waste disposal and recycling (e.g., Department of Toxic Substances Control regulations regarding photovoltaic modules); the measures/methods that will be taken to recycle, reuse, and/or reduce the amount of materials; the facilities and/or haulers that will be utilized; and the targeted project-specific recycling or reduction rate.	N/A

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Applicant Proposed Measures & Mitigation Measures Summary – Soda Mountain Solar			
Utilities and Service Systems	APM USS-1	During construction, the project site shall have, at a minimum, two bins: one for waste disposal and the other for the recycling of Construction and Demolition (C&D) materials. Additional bins are encouraged to be used for further source separation of C&D recyclable materials and shall be provided if required by applicable state and local laws. The project applicant shall maintain accurate records (receipts or other types of verification) for recycling of C&D recyclable materials and solid waste disposal; arrangements for such receipts can be made through the franchise hauler. These receipts will be retained to demonstrate compliance with the approved WRP if requested by the agencies and must clearly identify the amount of waste disposal and C&D materials recycled.	N/A
Utilities and Service Systems	APM USS-2	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.	MM 3.7-3