EXECUTIVE SUMMARY

This summary provides a brief synopsis of the County of Inyo (County) Renewable Energy General Plan Amendment (referred to as "proposed project" or "REGPA"), the results of the environmental analysis, and project alternatives considered within this Program Environmental Impact Report (PEIR). This summary does not contain the extensive background and analysis found in the document. Therefore, the reader should review the entire document to fully understand the project and its environmental consequences.

ES.1 PROJECT LOCATION

Inyo County is located on the east side of the Sierra Nevada, in the east-central part of California. Inyo County is approximately 10,200 square miles and is largely undeveloped. The County has identified Solar Energy Development Areas (SEDA) and the Owens Valley Study Area (OVSA) which comprise the project area of this PEIR. The SEDAs are divided into solar energy groups based on their location in the County and the associated transmission and distribution facilities. The Western Solar Energy Group is comprised of SEDAs in Laws, Owens Lake, Rose Valley, and Pearsonville; it also includes the OVSA. The Southern Solar Energy Group is comprised solely of the Trona SEDA, which is located in the south-central area of the county, along the boundary with San Bernardino County. The Chicago Valley, Charleston View, and Sandy Valley SEDAs are located in the southeastern area of the county and comprise the Eastern Solar Energy Group. Regional access within the County is provided via US Highway 395 (US 395), which traverses the entire western portion of the County, including portions of the OVSA and the Owens Lake, Rose Valley, and Pearsonville SEDAs. Other prominent roadways providing access to the western and southern solar energy groups include US 6, which transects the Laws SEDA; and State Routes (SRs) 136, 168, and 190. For the Eastern Solar Energy Group, regional access is provided via SR 178 and SR 127. Refer to Figure ES-1 for the locations of the Solar Energy Groups and their associated SEDAs (including the OVSA) in the County.

The County is largely rural in character and characterized by vast expanses of unspoiled vistas and arid resources. Most of the county's population lives in the incorporated City of Bishop, located in the north-central area of the County, or in the immediately surrounding areas. The rest of the County's population lives in small towns and communities, the majority of which are concentrated along the US 395 corridor in the Owens Valley. The County is characterized by broad valleys traversed by streams, rivers, and washes, giving rise to mountain ranges of low hills and jagged peaks. Elevations range from 14,505 feet above mean sea level on Mount Whitney within the Sierra Nevada on the County's western border with Tulare County, to 282 feet below mean sea level within Badwater Basin in eastern Inyo County in Death Valley National Park.

ES.2 PROJECT DESCRIPTION

The County is proposing to update its General Plan to include policies for solar energy development within the County. The proposed REGPA involves identifying new and modified General Plan goals, policies, and implementation measures, including provisions for actual sites identified in the County that may be appropriate for renewable energy development (i.e., SEDAs). The overall purpose of the proposed project is to regulate and direct the type, siting, and size of potential future renewable energy development within the County through adoption of land use policies that are consistent with and meet the broader goals and visions for the County as expressed in the Inyo County General Plan (2001, as amended). The seven specific objectives related to this purpose are as follows:

1. Provide for solar energy development opportunities in Inyo County to generate electricity from solar resources in accordance with the goals established by California State legislation and local policies regarding renewable energy.

2. Focus future solar energy development projects to designated development areas that have been selected through an analysis of geographic, physical, political, cultural, environmental, and socioeconomic opportunities and constraints.

3. Minimize direct and indirect impact from future solar energy development on the physical, biological, cultural, political, and socioeconomic environments.

4. Collaborate effectively with other public resource agencies, tribal governments, non-governmental organizations, and citizens/residents of Inyo County, and to utilize best available scientific information to aid impact assessment of future solar energy development.

5. Locate future solar development near existing electrical conveyance facilities.

6. Identify the total allowable capacity and developable acreages per Solar Energy Group and SEDA.

7. Provide for community scale, and/or distributed generation solar energy production opportunities throughout the County.

The REGPA will incorporate policies from the 2011 REGPA that have been modified, as well as new policies. The 2011 REGPA updated the Land Use, Public Services and Facilities, Economic Development, Conservation/Open Space, and Public Safety Elements of the General Plan and focused on: (1) identifying the appropriate means to develop renewable wind and solar energy resources provided that social, economic, and environmental impacts are minimized; (2) offsetting costs to the County and lost economic development potential and mitigation of economic effects; (3) working with appropriate state and federal agencies to protect military readiness; and, (4) considering conversion of lands utilized for agriculture, mining, and recreation. These policies may be amended or supplemented as a result of identified SEDAs, the stakeholder/public outreach processes, and the evaluations contained in this PEIR for incorporation into this proposed REGPA.

As part of the proposed REGPA, the County has identified eight SEDAs that may be appropriate for renewable energy development exploration. The SEDAs are areas within which renewable solar energy development may be viable based on criteria developed within the confines of: (1) energy generation ability; (2) proximity to transmission; (3) the presence of sensitive biological and cultural resources; (4) socioeconomic factors; and, (5) visual resources. It is also desirable that these areas be close enough to existing electrical conveyance corridors to export energy without the huge expense and environmental disruption of new transmission lines. These SEDAs are identified in order to direct potential developers of solar energy projects to areas that may be appropriate for development, and to direct developers away from areas that are not appropriate for such development.

Areas given special consideration as potential SEDAs include degraded lands such as brownfields, mines, landfills, and Owens Lake, and properties requested for consideration by private property owners. These qualities also define the priority development areas within the SEDAs evaluated in this PEIR. Areas excluded from consideration include Bureau of Land Management (BLM) areas of critical environmental concern, designated wilderness areas, and/or wilderness study areas. Development within the SEDAs may be further refined based on information regarding cultural, historic, visual, socioeconomic and other resources and constraints contained within this PEIR and subsequent environmental studies.

ES.3 SUMMARY OF ENVIRONMENTAL IMPACTS

This PEIR contains an environmental analysis of the potential impacts associated with implementing the project in accordance with the California Environmental Quality Act (CEQA). The issues that are analyzed in detail in the PEIR include: aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; geology and soils; greenhouse gas (GHG) emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; socioeconomics; transportation and circulation; and, utilities and service systems. The analysis contained in this PEIR concluded that the project would result in less than significant impacts to agriculture and forestry resources, air quality, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, socioeconomics, transportation and circulation, and utilities and service systems. The analysis concluded that significant and unavoidable impacts could occur with respect aesthetics, biological resources, and cultural resources.

Table ES-1 (located at the end of this Executive Summary) summarizes the project's potentially significant environmental impacts and proposed mitigation measures by issue, as detailed in Section 4.0 of this PEIR. The issues addressed in detail in Section 4.0 are based on the conclusions of the Notice of Preparation (NOP; refer to Appendix A). Analysis contained in this PEIR is conducted pursuant to State CEQA Guidelines, Appendix G.

ES.4 SUMMARY OF PROJECT ALTERNATIVES

Section 6.0 of this PEIR presents potential alternatives to the project and evaluates them as required by CEQA. As described in detail in that section, alternatives considered but rejected included a 2011 Renewable Energy Development Areas (REDA) Alternative and 2013 REDAs Alternative (more intensive version of 2011 REDA).

In accordance with Section 16126.6(e) of the State CEQA Guidelines, a "no project" alternative shall be evaluated, along with its impact. Under the No Project Alternative, the County would process proposed renewable energy project applications countywide without the benefit of the policy framework provided by the REGPA. Four additional alternatives were analyzed, including a Solar Photovoltaic (PV) Only Alternative, Distributed Generation Only Alternative, Reduced SEDA Alternative, and Solar Energy Development on Previously Disturbed Lands Only Alternative. These alternatives are analyzed in Section 6.0, and described below. A summary of the environmental impacts of these alternatives, compared to the proposed project, is provided in Table 6-2.

No Build Alternative

No Project Alternative would not include General Plan policy updates for solar energy development within the County. Significant portions of the County could be impacted by the development of solar and/or wind energy projects (all of which would be subject to CEQA review). The County would be limited in its ability to discourage project applicants from submitting renewable energy development proposals due to lacking regulatory guidance on the location, siting and size of such projects. Additionally, the County would not set a cap on the amount of renewable energy development. The No Project Alternative would not fulfill the majority of the project objectives as described in Section ES.2 because it would not regulate the size, capacity and impacts of solar energy development projects and could result in development of large swaths of undisturbed lands outside of the identified SEDAs.

Solar Photovoltaic Only Alternative

The Solar PV Only Alternative would provide for solar PV projects to be implemented within the eight proposed SEDAs; no solar thermal projects, solar trough, and/or solar power tower, would be allowed within the County. Distributed generation would still be supported within the County. Selection of this alternative would remove the more controversial types of solar energy projects from consideration; solar thermal applications would be denied by the County outright. Because this alternative would continue to allow solar PV development in the proposed SEDAs, it would meet the project objectives outlined in Section ES.2 above; however, solar thermal projects could be processed by other agencies.

Distributed Generation Only Alternative

The Distributed Generation Only Alternative would result in continued County support for distributed generation for solar energy projects ranging from 1 to 20 megawatts (MW). No SEDAs are proposed under this alternative. Under this alternative, applications for projects over 20 MW would be denied outright by the County, effectively prohibiting the construction and operation of solar energy projects greater than 20 MW within the County's jurisdiction. Because solar thermal projects are generally constructed at utility scale, this alternative would likely limit future development of solar thermal technologies in the near term. Implementation of the Distributed Generation Only Alternative would not meet all of the project objectives outlined in Section ES.2, as this alternative would be less supportive of the State's goal of reduced reliance on petroleum-based energy sources in favor of renewable energy sources. Utility scale projects could still be processed by other agencies.

Reduced SEDA Alternative

Under the Reduced SEDA Alternative, the County would eliminate certain SEDAs from potential development, while maintaining the total allowable MW capacity (900 MW) and allowable developable acreage (5,400 acres) included in the proposed project. Under this alternative, the Western Solar Energy Group would be reduced to only the Owens Lake SEDA (the Laws, Rose Valley, and Pearsonville SEDAs would be eliminated); the solar energy development cap would be maintained for this SEDA. The Southern Solar Energy Group (the Trona SEDA) would not change. The Eastern Solar Energy Group would maintain the same solar energy development cap as the proposed project; however, the Chicago Valley SEDA would be eliminated; the Sandy Valley SEDA solar energy development cap would be reduced; and, the Charleston View SEDA solar energy development cap would be increased.

Solar Energy Development on Previously Disturbed Lands Only Alternative

Under this alternative, the County would require that future applicants for solar energy development projects site over 60 percent of their projects on previously disturbed lands within the eight proposed SEDAs under this alternative. Disturbed lands include Owens Lake, abandoned mine lands, degraded lands, former landfill sites, Superfund sites, brownfields, and/or abandoned grazing/agricultural lands. The acreage and development caps presented under the proposed project would remain intact for the Solar Energy Development on Previously Disturbed Lands Alternative, although the feasibility of providing adequate sites to achieve this development potential is unknown. This alternative does not meet the project objectives to the same degree as the project.

Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines requires identification of an alternative other than the No Project Alternative as the environmentally superior alternative. The No Project Alternative, depending on the location and size of approved projects, could likely result in an exacerbation of the potential impacts in relation to the proposed project. The following alternatives are identified as being environmentally superior to the proposed project: Solar Photovoltaic Only Alternative; Distributed Generation Only Alternative; Reduced SEDA Alternative; and Solar Energy Development on Previously Disturbed Lands Only Alternative. These alternatives would not meet the project objectives to the same degree as the project.

ES.5 AREAS OF CONTROVERSY

On June 10, 2014, the County circulated an NOP to the public, potentially interested local, state, and federal agencies including the responsible and trustee agencies, and the State Clearinghouse to solicit comments on the proposed project. The NOP comment period was started in June 11, 2014 and ended on July 10, 2014. The County conducted three public scoping meetings and two public scoping sessions in support of the NOP during the public comment period. Comments received during the NOP public comment period and at the scoping meetings were considered by the County and incorporated into the PEIR as appropriate. In addition to the comments received during the scoping session meetings, a total of 22 letters were received in response to the NOP. Comments were submitted by:

- Amargosa Conservancy
- Big Pine Paiute Tribe of the Owens Valley
- Bishop Paiute Tribe, Tribal Council
- California Department of Transportation, District 9
- California Governor's Office of Planning and Research
- California Native Plant Society (CNPS)
- California Water Board, Lahontan Regional Water Quality Control Board (RWQCB)
- Center for Biological Diversity/Sierra Club
- Defenders of Wildlife/The Wilderness Society/Natural Resources Defense Council
- Friends of the Inyo
- Lone Pine Paiute-Shoshone Reservation (2)
- Manning, Sally
- Manzanar Committee
- McDonald, Jane
- The Nature Conservancy
- Noel, Amy
- Pritchett, Daniel
- Sonia, Joe
- Stroh, James
- US Department of the Interior, National Park Service, Pacific West Region
- Wilson, Earl

The primary issues of controversy raised by those commenting on the NOP include potential impacts related to aesthetics and visual resources, biological resources, and the REGPA process and policy. Other comments addressed the process for and extent of CEQA streamlining for future project-level EIRs as a result of this PEIR, the level of County authority over permitting, the level of County authority to impose proposed REGPA and PEIR mitigation measures on future solar projects proposed on federally-owned land, and the process for the separate study of Owens Valley. These issues are addressed in Sections 3.0 and 5.0.

ES.6 ENVIRONMENTAL IMPACTS SUMMARY

Table ES-1 summarizes the project's potentially significant environmental impacts (first column) and proposed mitigation measures (second column) by issue, as detailed in Section 4.0 of this PEIR. The third column of the table indicates whether the impact would be reduced to below a level of significance after implementation of the proposed mitigation measures. With the exception of air quality and noise, all significant impacts would be reduced to below a level of significance following implementation of the mitigation measures.

ES.7 PURPOSE AND LEGAL AUTHORITY OF THIS PROGRAM ENVIRONMENTAL IMPACT REPORT

This document has been prepared as a program EIR (PEIR) pursuant to Section 15168 of the State CEQA Guidelines to document the environmental impacts of solar energy development within the County. The contents of this PEIR represent the independent judgment of the County (State CEQA Guidelines Section 15050). Subsequent, proposed solar energy projects greater than 20 MW would be examined in the light of this PEIR to determine whether any additional environmental document must be prepared (State CEQA Guidelines Section 15168(c)). Solar energy projects up to 20 MW may be exempt from further CEQA analysis, unless an event specified in Public Resources Code Section 21166 occurs, in which case a Supplemental EIR or other CEQA document may be required.

Subsequently proposed individual solar energy projects greater than 20 MW, which are located within the SEDAs described in this PEIR and which are consistent with the REGPA, will undergo project specific analysis and will be examined in light of this PEIR to determine whether any additional environmental document must be prepared (State CEQA Guidelines Section 15168(c)) and, if so, the scope of the environmental document. Feasible mitigation measures and alternatives developed in this PEIR shall be incorporated into subsequent actions under the REGPA. Any future solar energy development that is proposed to be sited outside of the SEDAs (other than small scale, community scale, and/or distributed generation projects) has not been analyzed in this PEIR and would require separate environmental review under CEQA.

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Table ES-1 IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
AESTHETICS		
Future solar energy developments within the SEDAs and OVSA could result in potentially significant visual impacts related to: (1) scenic vistas and scenic resources; (2) degradation of the existing visual character or quality of the site and its surroundings; and (3) light and glare.	**AES-1: Prepare visual studies that include existing views, scenic vistas, and visual resources and evaluate the potential impacts to existing visual resources.** Site-specific visual studies shall be prepared for all proposed utility scale, distributed generation, and community scale solar energy projects within the individual SEDAs and the OVSA to assess potential visual impacts. The visual study shall include assessment of the existing visual environment, including existing views, scenic vistas, and visual resources, and evaluate the potential of the proposed solar energy project to adversely impact resources and degrade the visual character or quality of the site and its surroundings. The study shall include assessment of public views from key observation points, the locations of which shall be determined in consultation with County staff and, if applicable, other public agencies with jurisdiction over the project site (e.g., BLM). Visual simulations shall be prepared to conceptually depict post-development views from the identified key observation points. Applicable recommendations from the project-specific visual study shall be incorporated into the associated individual project design to address identified potential visual impacts. The analysis and results of the study shall be documented in a memorandum that will include: (1) an assessment of the existing visual environment, including existing views, scenic vistas, and visual resources and (2) an evaluation of the potential of the proposed solar energy project to adversely impact resources and degrade the visual character or quality of the site and its surroundings. Applicable recommendations from the project-specific visual analysis shall be incorporated into the associated individual project design to address identified potential visual impacts. **AES-2: Reduce potential effects of glare by preparing site-specific glare studies that inform project design.** Site-specific glare studies shall be prepared for all proposed utility scale, distributed generation, and community scale solar energy projects within the individual SEDAs and the OVSA to assess potential glare impacts. Applicable results and recommendations from the project-specific glare study shall be incorporated into the associated individual project designs to address identified potential visual impacts.	Significant and Unavoidable

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
AESTHETICS (cont.)		
	AES-3: Minimize visual contrast using colors that blend with surrounding landscape and do not create excessive glare. The project applicant for future solar energy projects shall treat the surfaces of structures and buildings visible from public viewpoints so that (1) their colors minimize visual contrast by blending with the surrounding landscape and (2) their colors and finishes do not create excessive glare. Surface color treatments shall include painting or tinting in earth tone colors to blend in with the surroundings desert and mountains. Materials, coatings, or paints having little or no reflectivity shall be used. **AES-4: Install natural screens to protect ground-level views into the project.** Where existing screening topography and vegetation are absent or minimal, natural-looking earthwork landforms (such as berms or contour slopes), vegetative, or architectural screening shall be installed to screen ground-level views into the project site. The shape and height of the earthwork landforms shall be context sensitive and consider distance and viewing angle from nearby public viewpoints. **AES-5: Prepare lighting plan that informs ways to reduce night lighting during construction and operation.** The project applicant shall prepare a lighting plan for all proposed utility scale, distributed generation, and community scale solar energy projects within the individual SEDAs and the OVSA that documents how project lighting would be designed and installed to minimize night sky impacts during construction and operation. The lighting plan shall include, at minimum, the following lighting design parameters: • Lighting shall be of the minimum necessary brightness consistent with operational safety and security. • Lighting shall incorporate fixture hoods/shielding with light directed downward or toward the area to be illuminated.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
AESTHETICS (cont.)		
	• Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security. • Project lighting shall be kept off when not in use whenever feasible and consistent with safety and security. **AES-6: Treat PV solar panel glass with anti-reflective coating.** For proposed PV facilities, glass used to cover solar panels shall be treated with an anti-reflective coating to further decrease reflection and increase the transmission of light through the glass to the cells. **AES-7: Coordinate with the Federal Aviation Administration when considering the use of audio visual warning systems.** For projects requiring aircraft warning lights, the project applicant shall coordinate with the Federal Aviation Administration (FAA) to consider the use and installation of audio visual warning systems technology[1] on tower structures. If the FAA denies a permit for the use of audio visual warning systems, the project applicant shall limit lighting to the minimum required to meet FAA safety requirements. **AES-8: Projects on federal land will comply with the respective federal agency's visual guidelines and policies.** Solar energy projects proposed on federal land within individual SEDAs and the OVSA shall be coordinated with the federal agency that is responsible for the management of the land and shall comply with the respective federal agency's visual guidelines and policies.	

[1] AVWS technology consists of all-weather, day and night, low-voltage, radar-based obstacle avoidance systems that activate lighting and audio signals to alert pilots of the presence of potential obstacles. The lights and audio warnings are inactive when there is no air traffic in the area of potential obstruction.

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
AESTHETICS (cont.)		
	AES-9: The project will implement best management practices and measures during construction to reduce impacts to project site and surrounding area. The following measures shall be implemented during the construction period for solar energy projects: • Construction boundaries and staging areas shall be clearly delineated and where appropriate fenced to prevent encroachment onto adjacent natural areas. • Construction staging and laydown areas visible from nearby roads, residences, and recreational areas shall be visually screened using temporary fencing. Fencing shall be of an appropriate design and color to visually blend with the site's surroundings. • Existing native vegetation shall be preserved to the greatest extent possible. • Project grading shall utilize undulating surface edges and contours that repeat the natural shapes, forms, textures, and lines of the surrounding landscape. • Exposed soils shall be restored to their original contour and vegetation. • Stockpiled topsoils shall be reapplied to disturbed surfaces. **AES-10: Projects requiring overhead electrical transmission connections will consider design and installation techniques that reduce visual impacts.** For projects that require overhead electrical transmission connections to existing transmission lines and for the potential off-site transmission corridor to serve the Charleston View SEDA, the following shall be considered in the design and alignment of the transmission line connections: • Avoid placing transmission towers and structures along ridgelines, peaks, or other locations where skylining effects would occur such that they would silhouette against the sky. • Place transmission corridor connection alignments along edges of clearings or at transition areas (i.e., natural breaks in vegetation or topography).	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
AESTHETICS (cont.)		
	• Treat transmission towers and structures with color and surfaces to reduce visual contrast with the surrounding visual landscape. • Use of appropriate and context-sensitive transmission tower types (i.e., lattice structures compared to monopoles) to reduce visual contrast with the surrounding visual landscape.	
AGRICULTURE AND FORESTRY RESOURCES		
Implementation of the REGPA could result in potentially significant impacts to farmlands through the direct and indirect conversion of those resources. No significant impacts to forestry resources would occur with implementation of the REGPA.	**AG-1: Review development proposals for potential impacts to agricultural operations.** The County Agricultural Commissioner shall be responsible for reviewing new development proposals adjacent to agricultural operations to ensure they do not significantly impact agricultural operations. **AG-2: Conduct site specific investigations for agricultural lands.** Site-specific agricultural resource investigations shall be completed for proposed solar development projects within the individual SEDAs and the OVSA that are located on lands utilized for agricultural operations prior to final project design approval. If agricultural operations are identified within the project area, alternative designs should be implemented to avoid and/or minimize impacts to those resources. This may include mitigating conversion of agricultural lands based on the mitigation ratios identified in consultation with affected agencies at the cost of the project applicant to the satisfaction of the County. Mitigation ratios and impact fees assessed, if any, shall be outlined in the Renewable Energy Development Agreement, Renewable Energy Permit, or Renewable Energy Impact Determination.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
AIR QUALITY		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially significant impacts related to: (1) daily threshold exceedances during construction activities; (2) daily threshold exceedances during operations; and (3) cumulatively considerable net increase in criteria pollutants during construction activities.	**AQ-1: Prepare site-specific air quality technical report.** Prior to issuance of Major Use Permits for solar energy projects, a site-specific air quality technical report shall be prepared and approved by the County, which will verify compliance with County and Great Basin Unified Air Pollution Control District standards during construction and operation of the solar project. Mitigation Measures AQ-2 and AQ-3, as defined below, will be incorporated into the site-specific technical report, and will be implemented during construction and operation of future projects. These measures require implementation of dust control practices during construction activities and solar project operations. **AQ-2: Reduce fugitive dust and particulate matter emissions during construction.** To control emissions of particulate matter, and to ensure compliance with Great Basin Unified Air Pollution Control District Rules 401 and 402 as well as applicable best management practices (BMP)s from the Renewable Energy Action Team's (REAT's) Best Management Practices and Guidance Manual (REAT 2010), solar projects shall implement fugitive dust and particulate matter emissions control measures including, but not limited to the following: • Water and/or coarse rock all active construction areas as necessary and indicated by soil and air conditions; • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard; • Pave or apply (non-toxic) soil stabilizers on all unpaved access roads; • Sweep daily (with water sweepers) all paved access roads; Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets; • Suspend excavation and grading activity when sustained winds make reasonable dust control difficult to implement, e.g., for winds over 25 miles per hour (mph). • Limit the speed of on-site vehicles to 15 mph.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
AIR QUALITY (cont.)		
	AQ-3: Implement dust control measures during operation. To control emissions of particulate matter, and to ensure compliance with Great Basin Unified Air Pollution Control District Rule 401 and 402 as well as applicable BMPs from REAT's Best Management Practices and Guidance Manual (REAT 2010), solar projects shall incorporate feasible dust control measures into the site design including, but not limited to, the following: • Incorporate wind deflectors intermittently across solar project sites; • Orient infrastructure/solar panels perpendicular to primary wind directions; and • Adjust panel operating angles to reduce wind speeds under panels.	
BIOLOGICAL RESOURCES		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially significant impacts related to sensitive biological resources. Potential impacts to specific resource areas are described below.	**BIO-1: Prepare project level biological resources evaluation and mitigation and monitoring plan.** Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact biological resources as determined by a qualified biologist, a project level biological resource evaluation shall be prepared by a qualified biologist for the project. The biological resource evaluation shall include field reconnaissance and focused surveys as determined necessary by a qualified biologist to identify special status species and natural communities present or having the potential to occur on the site, an evaluation of the extent of those habitats, an evaluation of the potential for impacts to each special status species and/or habitat, and shall prescribe specific mitigation measures to avoid or reduce impacts to biological resources. The level of analysis will be based on factors such as the size of the proposed project and extent of impacts to biological resources.	Significant and Unavoidable

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	For projects with the potential to impact special status species or habitats, a project-specific biological resources mitigation and monitoring plan shall be prepared in cooperation with and meets the approval of permitting agencies. The plan shall be implemented during all phases of the project and shall identify appropriate mitigation levels to compensate for significant direct, indirect, and cumulative impacts, including habitat, special status plant, and wildlife species losses as well as impacts to groundwater dependent vegetation. The plan shall address at a minimum: • Biological resource avoidance and minimization measures, and mitigation, monitoring and compliance measures required by federal, state, and local applicable permitting agencies. • Documentation (based on surveys) of sensitive plant and wildlife expected to be affected by all phases of the project (project construction, operation, abandonment, and decommissioning). Agencies may request additional surveying, based on the documentation or past experience working with the resources. Include measures to avoid or minimize impacts to species and habitat. • A detailed description of measures to minimize or mitigate permanent and temporary disturbances from construction activities. • All locations on a map, at an approved scale, of sensitive plant and wildlife areas subject to disturbance and areas requiring temporary protection and avoidance during construction. • Aerial photographs or images, at an approved scale, of areas to be disturbed during project construction activities. • Duration for each type of monitoring and a description of monitoring methodologies and frequency. • Performance standards and criteria to be used to determine if/when proposed mitigation is or is not successful.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• All standards and remedial measures to be implemented if performance standards and criteria are not met. • A closure/decommissioning or abandonment plan, including a description of funding mechanism(s). • A process for proposing plan modifications to the County project manager.	
Impacts to special status plant species could occur during construction and/or operation of the future solar developments under the REGPA.	**BIO-2: Minimize impacts to special status plants.** Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact special status plant species as determined by a qualified biologist/botanist, a qualified botanist shall determine the presence or absence of special status plants within the project site. The following steps shall be implemented to document special- status plants, as determined necessary by the botanist: • Review Existing Information. The botanist shall review existing information to develop a list of special status plants that could grow in the specific project area. Sources of information consulted shall include California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database, CNPS electronic inventory, and previously prepared environmental documents. If the project is taking place on BLM or state administered lands (e.g., BLM, State Trust Lands), the list of sensitive plants from that land managing agency shall be obtained and reviewed in addition to the lists previously mentioned. • Coordinate with Agencies. The botanist shall coordinate with the appropriate agencies (i.e., CDFW and US Fish and Wildlife Service [USFWS]) to discuss botanical resource issues and determine the appropriate level of surveys necessary to document special status plants.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		

	• Conduct Field Studies. The botanist shall evaluate existing habitat conditions for each project and determine what level of botanical surveys may be required. The type of botanical survey shall depend on species richness, habitat type and quality, and the probability of special status species occurring in a particular habitat type. Depending on these factors and the proposed construction activity, one or a combination of the following levels of survey may be required:
	  • Habitat Assessment. A habitat assessment shall be conducted to determine whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required.
	  • Species-Focused Surveys. Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special status plants. The surveys shall focus on special status plants that could grow in the region, and would be conducted during a period when the target species are evident and identifiable.
	  • Floristic Protocol-Level Surveys. Floristic surveys that follow the CNPS Botanical Survey Guidelines shall be conducted in areas that are relatively undisturbed and/or have a moderate to high potential to support special status plants. The CNPS Botanical Survey Guidelines require that all species be identified to the level necessary to determine whether they qualify as special status plants, or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special status plants that could occur in the area are evident and identifiable. To account for different special status plant identification periods, one or more series of field surveys may be required in spring and summer months.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Map Special status Plants. Special status plant populations identified during the field surveys shall be mapped and documented as part of the CEQA process, as applicable. Project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the projects objectives, then other suitable measures and mitigation shall be implemented in coordination with the appropriate regulatory agency (i.e., USFWS, CDFW, BLM). If special status plants are identified in the project area, the following measures shall be implemented to avoid and minimize impacts on special status plants: • The project shall be redesigned or modified to avoid direct and indirect impacts on special status plants to the maximum extent~~, if~~ feasible. • For projects that are determined to have the potential to result in "take" of state or federally-listed plant species, consultation shall be conducted with CDFW or USFWS respectively prior to project commencement. • Special status plants near the project site shall be protected by installing environmentally sensitive area fencing (orange construction barrier fencing) around special status plant populations. The environmentally sensitive area fencing shall be installed at least 20 feet from the edge of the population. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• If avoidance of special status plants is not feasible, mitigation shall be developed in coordination with USFWS and/or CDFW to reduce impacts on the local population of the special status species. No project shall destroy the entire known population of a special status plant species within any SEDA or the OVSA. If individuals of a special status species occur within an area proposed for construction and take cannot be avoided, the plants shall be transplanted under the direction of a qualified botanist if transplantation of such species is deemed likely to succeed or seed shall be collected prior to destruction of the plants and dispersed in suitable habitats not impacted by construction, if such habitats exist and seed collection is deemed likely to be successful by a qualified botanist with experience propagating the species in question. In all cases, CDFW will be notified at least 10 days prior to removal of any special status plant to allow transplantation or collection of seed at their discretion. • If transplanting is proposed, the botanist shall coordinate with the appropriate resource agencies and local experts to determine whether transplantation is feasible. If the agencies concur that transplantation is a feasible mitigation measure, the botanist shall develop and implement a transplantation plan through coordination with the appropriate agencies. The special status plant transplantation plan shall involve identifying a suitable transplant site; moving the plant material and seed bank to the transplant site; collecting seed material and propagating it in a nursery; and monitoring the transplant sites to document recruitment and survival rates.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
Impacts to special status wildlife species could occur as a result of implementation of the REGPA if construction and/or operation of the future solar developments would occur within or adjacent to suitable habitat. This includes potential impacts to special status fish, amphibians, reptiles, birds, and mammals.	**BIO-3: Minimize impacts to special status wildlife.** Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact special status wildlife as determined by a qualified biologist, a qualified wildlife biologist shall document the presence or absence of suitable habitat for special status wildlife in the project site. The following steps shall be implemented to document special status wildlife and their habitats for each project, as determined by the biologist: • Review Existing Information. The wildlife biologist shall review existing information to develop a list of special status wildlife species that could occur in the project area. The following information shall be reviewed as part of this process: the USFWS special status species list for the project region, CDFW's California Natural Diversity Database, previously prepared environmental documents, and USFWS-issued biological opinions for previous projects. If the project is taking place on BLM or state administered lands (e.g., BLM, State Trust Lands), the list of special status wildlife from that land managing agency shall be obtained and reviewed in addition to the lists previously mentioned. • Coordinate with State and Federal Agencies. The wildlife biologist shall coordinate with the appropriate agencies (CDFW, USFWS, BLM) to discuss wildlife resource issues in the project region and determine the appropriate level of surveys necessary to document special status wildlife and their habitats. • Conduct Field Studies. The wildlife biologist shall evaluate existing habitat conditions and determine what level of biological surveys may be required. The type of survey required shall depend on species richness, habitat type and quality, and the probability of special status species occurring in a particular habitat type. Depending on the existing conditions in the project area and the proposed construction activity, one or a combination of the following levels of survey may be required:	Significant and Unavoidable

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Habitat Assessment. A habitat assessment determines whether suitable habitat is present. The wildlife biologist shall conduct project-specific habitat assessments consistent with protocols and guidelines issued by responsible agencies for certain special status species. USFWS and CDFW have issued protocols for evaluating bald eagle habitat (2004 Protocol for Evaluating Bald Eagle Habitat and Populations in California). Habitat assessments are used to assess and characterize habitat conditions and to determine whether return surveys are necessary. If no suitable habitat is present for a given special status species, no additional species-focused or protocol surveys shall be required. • Species-Focused Surveys. Project-specific species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special status wildlife and if it is necessary to determine the presence or absence of the species in the project area. The wildlife biologist shall conduct project-specific surveys focusing on special status wildlife species that have the potential to occur in the region. The surveys shall be conducted during a period when the target species are present and/or active. • Protocol-Level Wildlife Surveys. The wildlife biologist shall conduct project specific protocol level surveys for special status species with the potential to be impacted by the proposed project. The surveys shall comply with the appropriate protocols and guidelines issued by responsible agencies for the special status species. USFWS and CDFW have issued survey protocols and guidelines for several special- status wildlife species that could occur in the project region, including (but not limited to): bald eagle, burrowing owl, golden eagle, Swainson's hawk, least Bell's vireo, willow flycatcher, desert tortoise, and San Joaquin kit fox. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS- or CDFW-approved biologist perform the surveys. The project proponent shall coordinate with the appropriate state or federal agency biologist before the initiation of protocol-level surveys to ensure that the survey results would be valid	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species. • Habitat Mapping. The wildlife biologist shall map special status wildlife or suitable habitat identified during the project-specific field surveys. In addition, the following measures should be implemented to avoid and minimize impacts on special status species and their habitats if they occur within a site: • For projects that are determined to have the potential to result in "take" of state or federally-listed animal species, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement. • Any special status wildlife and/or their habitats identified within a project site outside of the work area will be protected by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking shall be installed at a minimum distance from the edge of the resource as determined through coordination with state and federal agency biologists (USFWS and CDFW, BLM). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction- related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • If ground- disturbing activities are required prior to site mobilization, such as for geotechnical borings or hazardous waste evaluations, a qualified biologist shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• In areas that could support desert tortoise or any other sensitive wildlife species, a County-approved biologist with the appropriate CDFW and/or USFWS approvals for the species being salvaged and relocated shall walk immediately ahead of equipment during the clearing and grading activities to salvage and relocate the wildlife in the path of the operations. The species shall be salvaged and relocated to off-site habitat when conditions will not jeopardize the health and safety of the biologist. • Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicles shall not exceed 25 miles per hour on the project site. Vehicles shall abide by posted speed limits on paved roads. • For projects with the potential to affect desert tortoise, parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it shall be left to move on its own. If it does not move within 15 minutes, a CDFW and USFWS approved desert tortoise biologist may remove and relocate the animal to a safe location if temperatures are within the range described in the Desert Tortoise Field Manual (USFWS 2013 or most recent version, available from the Ventura Fish and Wildlife Office website http://www.fws.gov/ventura/endangered/species/surveys-protocol.html). All access roads outside of the fenced project footprint shall be delineated with temporary desert tortoise exclusion fencing on either side of the access road, unless otherwise authorized by the County project manager and County biologist.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• A qualified biologist shall be designated to oversee compliance with biological resources avoidance and minimization measures during mobilization, ground disturbance, grading, construction, operation, and closure/decommissioning, or project abandonment, particularly in areas containing or known to have contained sensitive biological resources, such as special status species and unique plant assemblages. The qualified biologist shall perform biological monitoring during all grading, clearing, grubbing, trenching, and construction activities. 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 biological monitor. Spoils shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special status species. Parking areas, staging and disposal site locations shall also be located in areas without native vegetation or special status species habitat. All disturbances, vehicles, and equipment shall be confined to the flagged areas. The qualified biologist shall be responsible for actions including, but not limited to, the following: o Clearly marking sensitive biological resource areas and inspecting the areas at appropriate intervals for meeting regulatory terms and conditions. o Inspecting, daily, active construction areas where wildlife may have become trapped (for example, trenches, bores, and other excavation sites that constitute wildlife pitfalls outside the permanently fenced area) before beginning construction. At the end of the day, conducting wildlife inspections of installed structures that would entrap or not allow escape during periods of construction inactivity. Periodically inspecting areas with high vehicle activity (such as parking lots) for wildlife in harm's way. o Overseeing special status plant salvage operations. o Immediately recording and reporting hazardous spills immediately as directed in the project hazardous materials management plan.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	○ Coordinating directly and regularly with permitting agency representatives regarding biological resources issues, and implementation of the biological resource avoidance and minimization measures. ○ Maintaining written records regarding implementation of the biological resource avoidance and minimization measures, and providing a summary of these records periodically in a report to the appropriate agencies. ○ Notifying the project owner and appropriate agencies of non-compliance with biological resource avoidance and minimization measures. ○ At the end of each work day, the biological monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled or if backfilling is not feasible, the biological monitor shall ensure that all trenches, bores, and other excavations are sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically, but no less than three times, throughout the day and at the end of each workday by the qualified biologist. Should a tortoise or other wildlife become trapped, the CDFW and USFWS-approved desert tortoise biologist shall remove and relocate the individual as described in the project's Desert Tortoise Relocation/ Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	○ Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground, and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected by the biological monitor for desert tortoises or other special status species such as fringe-toed lizard, before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed. • Access roads, pulling sites, storage and parking areas outside of the fenced solar facility area shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Mitigating Bird Collisions with Power Lines (APLIC 2004) to reduce the likelihood of bird electrocutions and collisions. • Facility lighting shall be designed, installed, and maintained to direct light downwards towards the project site and avoid light spillover to wildlife habitat. • Construction and operation related noise levels shall be minimized to minimize impacts to wildlife. • All vertical pipes greater than 4 inches in diameter shall be capped to prevent the entrapment of birds and other wildlife. • All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The biological monitor shall be informed of any hazardous spills immediately. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• Road surfacing and sealants as well as soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, state, and local laws and according to the guidelines for wildlife- safe use of herbicides in BIO-24 (Weed Management Plan). • The following measures shall be implemented to minimize attractants to wildlife: o If the application of water is needed to abate dust in construction areas and on dirt roads, use the least amount needed to meet safety and air quality standards and prevent the formation of puddles, which could attract wildlife to construction sites. The biological monitor shall patrol these areas to ensure water does not puddle and attract desert tortoise, common ravens, and other wildlife to the site and shall take appropriate action to reduce water application where necessary. o Water shall be prohibited from collecting or pooling for more than 24 hours after a storm event within the project retention basin. Standing water within the retention basin shall be removed, pumped, raked, or covered. Alternative methods, or the timeframe for allowing the water to pool may be modified with the approval of the biological monitor. o Dispose trash and food-related items in self-closing, sealable containers with lids that latch to prevent wind and wildlife from opening containers. Empty trash containers daily and remove from the project site those associated with construction when construction is complete. o To avoid attracting insectivorous birds and bats, prepare a facility vector (such as mosquitoes or rodents) control plan, as appropriate, that meets the permitting agency approval and would be implemented during all phases of the project.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Workers or visitors, while on project property, shall be prohibited from feeding wildlife, bringing domestic pets to the project site, collecting native plants, or harassing wildlife. • To reduce the potential for the transmission of fugitive dust the project proponent shall implement dust control measures. These shall include: o The project proponent shall apply non-toxic soil binders, equivalent or better in efficiencies than the California Air Resources Board-approved soil binders, to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. o Water the disturbed areas of the active construction sites at least three times per day and more often if uncontrolled fugitive dust is noted. Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer's specifications to exposed piles with a 5 percent or greater silt content. Agents with known toxicity to wildlife shall not be used unless approved by the County biologist and County project manager. o Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures above) or otherwise create stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased. o Increase the frequency of watering, if water is used as a soil binder for disturbed surfaces, or implement other additional fugitive dust mitigation measures, to all active disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 mph.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• A project-specific worker environmental awareness program (WEAP) shall be developed and carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning, or project abandonment, and restoration/ reclamation activities). The WEAP shall include the biological resources present and the measures for minimizing impacts to those resources. Interpretation for non-English speaking workers shall be provided, and all new workers shall be instructed in the WEAP. The project field construction office files will contain the names of onsite personnel (for example, surveyors, construction engineers, employees, contractors, contractor's employees, subcontractors) who have participated in the education program. All employees and contractors shall be trained to carry out the WEAP and on their role in ensuring the effectiveness of implementing the Plan. At a minimum, the WEAP shall including the following: o Photos and habitat descriptions for special status species that may occur on the project site and information on their distribution, general behavior, and ecology. o Species sensitivity to human activities. o Legal protections afforded the species. o Project measures for protecting species. o State and federal law violation penalties. o Worker responsibilities for trash disposal and safe/ humane treatment of special status species found on the project site, associated reporting requirements, and specific required measures to prevent taking of threatened or endangered species. o Handout materials summarizing the contractual obligations and protective requirements specified in project permits and approvals. o Project site speed limit requirements and penalties.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• A project specific restoration, re-vegetation, and reclamation plan that meets the approval of permitting agencies shall be prepared and carried out for all projects. The plan shall address at a minimum: o Minimizing natural vegetation removal and the consideration of cutting or mowing vegetation rather than total removal, whenever possible. o Salvage and relocation of cactus and yucca from the site before beginning construction. o Identification of protocols to be used for vegetation salvage. o Reclaiming areas of temporarily disturbed soil using certified weed free native vegetation and topsoil salvaged from excavations and construction activities. o Restoration and reclamation of temporarily disturbed areas, including pipelines, transmission lines, staging areas, and temporary construction-related roads as soon as possible after completion of construction activities. The actions are recommended to reduce the amount of habitat converted at any one time and promote recovery to natural habitats. o Specifying proper seasons and timing of restoration and reclamation activities to ensure success. **BIO-4: Minimize impacts to special status fish.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status fish, consultation with USFWS shall be conducted for projects with the potential to impact federally-listed species including Owens pupfish or Owens tui chub and coordination with CDFW will be conducted for projects with the potential to impact state listed species or CDFW species of special concern including Owens sucker and Owens speckled dace. For projects that are determined to have the potential to result in "take" of state or federally-listed fish species, consultation shall be conducted with CDFW or USFWS respectively and take authorization obtained prior to project commencement.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	BIO-5: Minimize impacts to amphibians. The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status amphibians. • Surveys for special status amphibians including but not limited to northern leopard frog, Owens Valley web-toed salamander, and Inyo Mountains slender salamander shall be conducted by a qualified biologist with experience surveying for and/or handling these species. If construction is scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted within two weeks prior to the commencement of construction. If construction is not scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted during the optimal period of identification for these species (in the calendar year prior to construction) and again within two weeks prior to the commencement of construction. • If any of these species are found on a project site during the surveys, CDFW shall be contacted and avoidance and mitigation measures appropriate to the species will be developed. Avoidance measures could include actions such as waiting to begin construction until the animal passively disperses from the project site, active relocation of the animal, or allowing construction to begin with the institution of an appropriate no disturbance buffer until the animal has passively dispersed. Mitigation measures could include restoration of temporarily disturbed habitats.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• If federal or state-listed amphibians not discussed above are determined to have the potential to occur on a project site or otherwise be impacted by the project, consultation shall be conducted with USFWS and CDFW respectively to determine the survey protocol and mitigation measures appropriate to the species. For projects that are determined to have the potential to result in "take" of state or federally-listed amphibian species, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement. **BIO-6: Minimize impacts to desert tortoise.** The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect desert tortoise in order to avoid, minimize, and mitigate for impacts: • Consultation shall be conducted with CDFW and USFWS for any projects where desert tortoise or their sign is found on the site and/or the project is determined by a qualified biologist to have the potential to impact desert tortoise. In such cases, permits under Section 2080 of the Fish and Game Code and Section 7/10 of the Federal Endangered Species Act (FESA) authorizing incidental take of desert tortoise will be obtained from CDFW and USFWS respectively prior to implementation of the project, including any project-related ground disturbing activities. All requirements of the 2081/2080.1 permit and the Biological Opinion shall be implemented. • The project proponent shall fully mitigate for habitat loss and potential take of desert tortoise. The project specific mitigation shall be developed in coordination with CDFW and USFWS, and would be reflective of the mitigation measures described in the Biological Opinion prepared by the USFWS for the project.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• Projects shall not be sited within areas identified for desert tortoise recovery or conservation according to the Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*) (USFWS 2011) (such as designated critical habitat, Areas of Critical Environmental Concern, Desert Wildlife Management Areas, Priority Connectivity Areas, and other areas or easements managed for desert tortoises). • On project sites containing desert tortoise, consultation shall be conducted with USFWS and CDFW to determine the need for and/or feasibility of conducting desert tortoise translocation (changing location or position) to minimize the taking of the tortoises, if they are observed within the proposed project area. See http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/ for federal translocation plan guidance. Translocation plan development and implementation may require, but not be limited to: additional surveys of potential recipient sites; translocated and resident tortoise disease testing and health assessments; monitoring protocols; and consideration of climatic conditions at the time of translocation. Due to the potential magnitude of proposed renewable energy project impacts on desert tortoises, USFWS and CDFW must evaluate translocation efforts on a project by project basis in the context of cumulative effects. • A desert tortoise authorized biologist approved by CDFW and USFWS shall be contracted to oversee and be responsible for ensuring compliance with desert tortoise avoidance and minimization measures before initiation of and during ground-disturbing activities. The desert tortoise biologist shall conduct clearance surveys, tortoise handling, artificial burrow construction, egg handling, and other procedures in accordance with the Guidelines for Handling Desert Tortoise During Construction Projects (Desert Tortoise Council 1999) or the most current USFWS guidance. The desert tortoise biologist shall be present on site from March 15 through October 31 (active season) during ground-disturbing activities in areas outside the tortoise exclusion fencing. It is recommended that the biologist be on call from November 1 to March 14 (inactive season) and checks such construction areas immediately before construction activities begin.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Refer to the Ventura Fish and Wildlife Office website <http://www.fws.gov/ventura/endangered/species/surveys-protocol.html> for desert tortoise authorized biologist and monitor responsibilities and qualifications, and survey and translocation guidance, and refer to the Nevada Fish and Wildlife Office (desert tortoise recovery office) website <http://www.fws.gov/nevada/desert_tortoise/dtro/.html> for desert tortoise federal recovery plan documents. 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 2013 USFWS Desert Tortoise Field Manual available at the Ventura Fish and Wildlife Office website listed above, or more current guidance provided by CDFW and USFWS. All terms and conditions described in the Biological Opinion for the project prepared by the USFWS shall be implemented. • The project owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. These measures include, but are not limited to, the following: o Before starting project ground disturbing activities, the project proponent shall avoid potential desert tortoise harm by incorporating desert tortoise exclusion fencing into permanent fencing surrounding the proposed facility, and installing desert tortoise exclusion fencing around temporary project construction areas such as staging area, storage yards, excavations, and linear facilities. The tortoise exclusion fencing shall be constructed consistent with the USFWS 2010 Desert Tortoise Exclusion Fence Specifications or the most current guidance provided by USFWS and CDFW, and should be constructed in late winter or early spring to minimize impacts to desert tortoise and accommodate subsequent tortoise surveys.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	○ Within 24 hours before starting tortoise exclusion fence construction, the desert tortoise biologist shall survey the fence alignment and utility right-of-way alignments and clear desert tortoises from the area. The surveys and relocation methods shall be conducted using techniques approved by the CDFW and USFWS. Following construction of the tortoise exclusion fence, the desert tortoise biologist shall conduct clearance surveys within the fenced area to ensure as many desert tortoises as possible have been removed from the site. Burrows and tortoises identified within the project area shall be handled according to the USFWS Desert Tortoise Field Manual, and tortoises requiring relocation shall be handled in accordance with the project Desert Tortoise Relocation/Translocation Plan. ○ Heavy equipment may enter the project site following the completion of project area desert tortoise clearance surveys by the desert tortoise biologist. Monitoring initial clearing and grading activities by the biologist will help ensure that tortoises missed during the initial clearance survey are moved from harm's way. ○ The desert tortoise biologist shall be responsible for appropriate documentation and reporting to the permitting agencies for desert tortoises handled, in accordance with the project Desert Tortoise Relocation/Translocation Plan. ○ Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates shall be kept closed, except for the immediate passage of vehicles, to prevent desert tortoise passage into the project area.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	○ Following installation of the desert tortoise exclusion fencing – both the permanent site fencing and temporary fencing in the utility corridors – the fencing shall be regularly inspected by the biological monitor. The biological monitor shall ensure that damage to the permanent or temporary fencing is immediately blocked to prevent tortoise access and permanently repaired within 72 hours between March 15 and October 31, and within 7 days between November 1 and March 14. The biological monitor shall inspect permanent fencing quarterly and after major rains to ensure fences are intact and there is no ground clearance under the fence that would allow tortoises to pass. The biologist shall inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within desert tortoise habitat (outside the permanently fenced area), before the materials are moved, buried, or capped. As an alternative, the materials may be capped before storing outside the fenced area or placing on pipe racks. Inspection or capping is not necessary if the materials are stored within the permanently fenced area after completing desert tortoise clearance surveys. ○ The project proponent shall ensure vehicular traffic does not exceed 25 miles per hour within the delineated project areas or on access roads in desert tortoise habitat. On unpaved roads suppress dust and protect air quality by observing a 10-mile per hour speed limit. ○ To avoid vehicle impacts to desert tortoise, workers shall be responsible for inspecting the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside the permanently fenced area. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, the desert tortoise biologist may remove and relocate the animal to a safe location.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• The project proponent shall develop and implement a Desert Tortoise Relocation/Translocation Plan that is consistent with current USFWS approved guidelines. The goal of the plan will be to safely exclude desert tortoises from within the fenced project area and relocate/translocate them to suitable habitat capable of supporting them, while minimizing stress and potential for disease transmission. The plan shall be developed in consultation with the USFWS to ensure the document does not conflict with conditions issued under an Incidental Take Statement. The plan will utilize the most recent USFWS guidance on translocation that includes siting criteria for the translocation site and control site, methods for translocation/relocation including the holding pen, and post translocation/relocation monitoring. Development and implementation of a translocation plan may require, but may not be limited to, additional surveys of potential recipient sites; disease testing and health assessments of translocated and resident tortoises; and consideration of climatic conditions at the time of translocation. The plan shall designate a relocation site as close as possible to the disturbance site that provides suitable conditions for long term survival of the relocated desert tortoise and outline a method for monitoring the relocated tortoise. • The Desert Tortoise Relocation/Translocation Plan must be approved by the County, CDFW and USFWS prior to any project-related ground disturbing activity. • Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the Project Manager for review and approval, a written report identifying which items of the plan have been completed, and a summary of all modifications to measures made during implementation of the plan. Written monthly progress reports shall be provided to the Project Manager for the duration of the plan implementation.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• The project proponent shall design and implement a Raven Monitoring, Management, and Control Plan that is consistent with the most current USFWS raven management guidelines. The goal of the plan shall be to minimize predation on desert tortoises by minimizing project-related increases in raven abundance. The plan shall be approved by the County, CDFW and USFWS prior to the start of any project-related ground disturbing activities. **BIO-7: Minimize impacts to special status reptiles (except desert tortoise).** The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status reptiles (with the exception of desert tortoise which has separate mitigation measures): • Surveys for special status reptiles including but not limited to northern sagebrush lizard, Panamint alligator lizard, and Mojave fringe-toed lizard shall be conducted by a qualified biologist with experience surveying for and/or handling these species. If construction is scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted within two weeks prior to the commencement of construction. If construction is not scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted during the optimal period of identification for these species (in the calendar year prior to construction) and again within two weeks prior to the commencement of construction.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• If any of these species are found on a project site during the surveys, CDFW will be contacted and avoidance and mitigation measures appropriate to the species will be developed. Avoidance measures could include actions such as waiting to begin construction until the animal passively disperses from the project site, active relocation of the animal, or allowing construction to begin with the institution of an appropriate no disturbance buffer until the animal has passively dispersed. Mitigation measures could include restoration of temporarily disturbed habitats. • If federal or state-listed reptiles not discussed above are determined to have the potential to occur on a project site or otherwise be impacted by the project, consultation shall be conducted with USFWS and CDFW respectively to determine the survey protocol and mitigation measures appropriate to the species. **BIO-8: Minimize impacts to Swainson's hawk.** The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Swainson's hawk: • Surveys shall be conducted for Swainson's hawk by a qualified biologist according to the 2010 Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (California Department of Fish and Game [CDFG] 2010) or more recent guidance, unless otherwise directed by CDFW. This guidance dictates survey methods for detecting Swainson's hawk nesting in or in the vicinity of a project site and measure to avoid and/or reduce impacts to nesting Swainson's hawk if they are found. The project applicant shall be responsible for coordinating with CDFW and ensuring that the CDFW guidance is implemented.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	BIO-9: Minimize impacts to burrowing owl. The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect burrowing owl, unless otherwise directed by CDFW: • In the calendar year that construction is scheduled to commence, surveys will be conducted by a qualified biologist to determine presence/absence of burrowing owls and/or occupied burrows in the project site and accessible areas within 500 feet according to the CDFW's *Staff Report on Burrowing Owls* (CDFG 2012). A winter survey will be conducted between December 1 and January 31 and a nesting survey will be conducted between April 15 and July 15. Pre-construction surveys will also be conducted within 30 days prior to construction to ensure that no additional burrowing owls have established territories since the initial surveys. If no burrowing owls are found during any of the surveys, no further mitigation will be necessary. If burrowing owls are found, then the following measures shall be implemented prior to the commencement of construction: o During the non-breeding season (September 1 through January 31) burrowing owls should be evicted by passive relocation as described in the Staff Report on Burrowing Owls (CDFG 2012). o Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer unless a qualified biologist approved by CDFW verifies through non-invasive means that either: (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	○ If on-site avoidance is required, the location of the buffer zone will be determined by a qualified biologist. The developer shall mark the limit of the 75-meter buffer zone with yellow caution tape, stakes, or temporary fencing. The buffer will be maintained throughout the construction period. ○ Where on-site avoidance is not possible, CDFW should be consulted regarding the appropriate avoidance and minimization measures to avoid impacts to this species. **BIO-10: Minimize impacts to western snowy plover, western yellow-billed cuckoo, Inyo California towhee, and bank swallow.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect federally-listed bird species (without published survey protocols) including the western snowy plover, western yellow-billed cuckoo, Inyo California towhee, and bank swallow, the USFWS shall be contacted to develop project specific measures to determine the potential for presence/absence of the species in the project area and appropriate avoidance and mitigation measures. For projects in the desert portions of Inyo County, contact the Palm Springs Fish and Wildlife Office. For projects in the forested portions of the County or the Owens Valley, contact the Nevada Fish and Wildlife Office. Mitigation measures shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat. For projects that are determined to have the potential to result in “take” of federally-listed bird species, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	BIO-11: Minimize impacts to southwestern willow flycatcher. Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect southwestern willow flycatcher, surveys shall be conducted according to Southwestern Willow Flycatcher Protocol Revision 2000 (http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/SWWFlycatcher.2000.protocol.pdf) following the guidelines for the revised protocol for project-related surveys or the most recent guidance as determined in coordination with the USFWS Pacific Southwest Region Nevada Fish and Wildlife Office. For projects that are determined to have the potential to result in "take" of southwestern willow flycatcher, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement. Mitigation measures shall be implemented and shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat. **BIO-12: Minimize impacts to bald and golden eagle.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect bald and golden eagles, the project proponent shall implement the following measures to avoid and offset impacts:	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Site specific surveys and monitoring of known or suspected eagle nesting and foraging habitat in areas where eagles occur (i.e., all of California) shall be conducted to provide background information related to eagle take permits. Surveys shall be conducted using (at least) methods and qualified personnel as recommended by CDFW and USFWS. Surveys shall be conducted according to the USFWS 2010 Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (available online at http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/usfws_interim_goea_monitoring_protocol_10march2010.pdf), the USFWS 2004 Protocol for Evaluating Bald Eagle Habitat and Populations in California and CDFW's 2010 Bald Eagle Breeding Survey Instructions (both documents are available online at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html) or the most recent guidance regarding non-breeding season surveys for winter, migratory, and floating populations of eagles determined in coordination with CDFW and USFWS. • Where proposed projects may result in take of bald or golden eagles, the USFWS shall be consulted to determine the standards and requirements for the permit titled "Eagle Take – Necessary to Protect Interests in a Particular Locality." Eagle take permits are performance based and will hinge on the merits of the application. The permit application form and related information are on the USFWS website: http://www.fws.gov/migratorybirds/ baldeagle.htm. The final rule (Federal Register / Vol. 74, No. 175, September 11, 2009), Environmental Assessment (http://www.fws.gov/migratorybirds/CurrentBirdIssues/BaldEagle/FEA_EagleTakePer mit_Final.pdf), implementation and protocol documents, and consultations with USFWS will provide additional guidance.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• Projects shall avoid, to the extent needed to comply with state and federal requirements, siting project facilities and infrastructure in a location or manner that would cause bald and golden eagle mortality, injury, and/or disturbance; i.e., locate facilities outside of eagle breeding home ranges as well as important breeding, wintering, and dispersal foraging areas, migration stopovers and corridors, and areas used by eagles for thermal or orographic lift. • Projects shall incorporate actions to avoid eagle disturbance (refer to the USFWS National Bald Eagle Management Guidelines, May 2007 and Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance, Attachment II) in consultation with the USFWS to obtain the most current guidance and measures. **BIO-13: Minimize impacts to least Bell's vireo.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect least Bell's vireo, surveys shall be conducted according to the USFWS Least Bell's Vireo Survey Guidelines (http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/LBVireo.2001.protocol.pdf) or the most recent guidance as determined in coordination with the USFWS Pacific Southwest Region Nevada Fish and Wildlife Office. For projects that are determined to have the potential to result in "take" of least Bell's vireo, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement. Mitigation measures shall be implemented and shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	BIO-14: Minimize impacts to bighorn sheep. Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect bighorn sheep, the project applicant shall retain a qualified biologist, approved by the USFWS and CDFW to conduct preconstruction surveys for Sierra Nevada bighorn sheep and/or Peninsular and Mojave bighorn sheep depending on the location of the project. Due to low detection probabilities, the following data shall be used when evaluating potential projects impacts to the species: data relative to historic ranges of bighorn sheep; known and potential wildlife corridors (such as, those identified in the BLM Mojave and Colorado deserts land use plans); point location data; and existing literature. If bighorn sheep or their migration routes exist, are known or likely to occur on or in the vicinity of the project site, and may be affected by project-related activities, the consultation shall be conducted with USFWS, CDFW, and other stakeholders, as appropriate, regarding avoidance, minimization, compensatory mitigation, or site abandonment. For projects that are determined to have the potential to result in "take" of state or federally-listed bighorn sheep, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	BIO-15: Minimize impacts to Sierra Nevada red fox. Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Sierra Nevada red fox, CDFW shall be contacted to develop project specific measures to determine the potential for presence/absence of this species in the project area and appropriate avoidance and mitigation measures. Mitigation measures shall include, but are not limited to, a species specific habitat assessment and/or focused surveys to determine whether Sierra Nevada red fox or its habitat is present in or adjacent to the project site, measures to avoid or minimize impacts to this species during construction and operation of the solar development, and compensatory mitigation for loss of habitat. For projects that are determined to have the potential to result in "take," consultation will be conducted with CDFW under the California Endangered Species Act and incidental take authorization will be obtained prior to project commencement. **BIO-16: Minimize impacts to Mohave ground squirrel.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Mohave ground squirrel, consultation shall be conducted with CDFW to determine the survey protocol and mitigation measures appropriate to the project. For projects that are determined to have the potential to result in "take" of Mohave ground squirrel, consultation shall be conducted with CDFW and take authorization shall be obtained prior to project commencement. Avoidance and mitigation measures shall include but are not limited to the following: • The project applicant shall retain a CDFW-approved Mohave ground squirrel biologist to oversee CDFW required measures including but not limited to tasks such as conducting clearance surveys, handling Mohave ground squirrels, artificial burrow construction, and other procedures in accordance with CDFW protocols.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• The CDFW-approved biologist shall conduct a Mohave ground squirrel preconstruction survey in areas subject to construction disturbance no less than 30 days before initial ground disturbance activities start according to the most current CDFW guidelines on presuming presence/absence of the animals, conducting surveys and survey protocols. • If Mohave ground squirrels are found in project site burrows during project-related activities, the qualified biologist will relocate the animal in consultation with CDFW to a burrow at a CDFW approved protected offsite location. **BIO-17: Minimize impacts to American badger and kit fox.** Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect American badger and/or kit fox, the following measures shall be implemented to avoid, minimize, and mitigate for impacts to these species: • The project proponent shall prepare and implement an American badger and/or kit fox management plan. The plan shall be prepared in accordance with the most current CDFW guidelines for these species. The plan shall be approved by CDFW prior to implementation. The plan shall include the following components: o Preconstruction surveys and mapping efforts: biological monitors shall perform pre- construction surveys for badger and kit fox dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active, including characterization of den type for kit fox (natal, pupping, likely satellite, atypical) per CDFW guidance, and mapped along with major project design elements.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	○ 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. Excavation and filling activities shall be performed by the qualified biologist. Potentially and confirmed active dens shall not be disturbed during the whelping/pupping season (February 1 to September 30). ○ Monitoring requirements. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the qualified biologist for three consecutive nights (during weather conditions favorable for detection) using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. ○ Passive relocation strategies. The management plan shall contain, at a minimum, several strategies to passively relocate animals from the site. These methods may entail strategic mowing, fencing, or other feasible construction methods to assist in moving animals offsite toward desirable land. The plan shall address location of preferred offsite movement of animals, based on CDFW data and land ownership. Private land is to be avoided to the maximum extent practicable. ○ Escape dens shall be installed along the perimeter fencing to reduce predation risk. ○ Kit fox disease prevention measures. The qualified biologist shall notify the County project manager and CDFW within 24 hours if a dead kit fox is found or appears sick. The plan must also detail a response to a kit fox injury, including a necropsy plan, reporting methods, and scope of adaptive methods in the event of a known or suspected outbreak. The project owner will pay for any necropsy work.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	BIO-18: Minimize impacts to other special status birds, raptors, migratory birds, nesting birds and bats. The following measures apply to all projects developed under the REGPA that are determined during the project level biological resource evaluation to have the potential to impact nesting birds and/or bats and shall be implemented to avoid, minimize, and mitigate for impacts to birds and bats. These measures are for bird species without established protocols and non-listed bird species that lack species-specific mitigation measures (not applicable to the common raven). For future development proposed to be located on or near land with old mines, specific survey protocols and mine closure considerations shall be developed. **<u>Pre-Construction Bird Surveys and Avoidance Measures</u>** If project construction occurs between roughly February 1 and August 31, a County-approved qualified biologist(s) shall conduct preconstruction surveys for nesting birds. The biologist(s) conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques. Surveys shall be conducted in accordance with the following guidelines: • Surveys shall cover all potential nesting habitat in the project site and within 500 feet of the project site and linear facilities boundaries – inaccessible areas outside of the project boundary may be surveyed from within the project site or publicly accessible land with the aid of binoculars. • Vegetation removal or other ground disturbing activities should be avoided between February 1 and August 31; however if it cannot be avoided, the avian biologist shall survey breeding/nesting habitat within the survey radius described within one week prior to the start of project activities.	Significant and Unavoidable

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• CDFW and/or USFWS must provide concurrence with the survey findings prior to the start of construction. Site preparation and construction activities may begin after receiving the concurrence and if no breeding/nesting birds are observed. Additional follow- up surveys shall be conducted if periods of construction inactivity exceed one week in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation. If active nests are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest, the size of which is to be determined by the project biologist in consultation with CDFW and /or USFWS) and a monitoring plan shall be developed. The nesting bird plan shall identify the types of birds that may nest in the project area, the proposed buffers, monitoring requirements, and reporting standards that will be implemented to ensure compliance with the Migratory Bird Treaty Act and Fish and Game Codes 3505 and 3505.3. The avian biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed. **Pre-Construction Bat Surveys and Avoidance Measures** Pre-construction bat surveys shall be conducted by a qualified biologist(s) familiar with standard bat survey techniques. If night or day roosting bats are identified in project structures they shall not be disturbed and a 100-foot non-disturbance buffer shall be placed between the roost and the construction activities until a determination is made whether the roost is a maternity roost or a non-breeding roost. Maternity colonies shall not be disturbed until coordination with CDFW is conducted to determine appropriate measures including an appropriate no-disturbance buffer. If the qualified bat biologist determines roosting bats consist of a non-breeding roost, the individuals shall be safely evicted under the direction of a qualified bat biologist. CDFW shall be notified of any bat evictions within 48 hours.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	Bat and Avian Protection Plan A bat and avian protection plan shall be developed to protect bats, migratory birds, and golden eagles while improving conservation, safety, and reliability for utility customers. The plan shall include measures to monitor the death and injury of birds from solar flux, radiance, and collisions with facility features such as reflective mirror-like surfaces. Guidance in the California Guidelines (Appendix D) and Avian Protection Plan Guidelines published by the APLIC and USFWS (2005) shall be consulted. The plan shall be approved by the County, CDFW, and USFWS prior to the start of project construction. The following monitoring/detection recommendations from the USFWS Forensics Laboratory (Kagan et al. unpub.) shall be considered: • Install video cameras sufficient to provide 360-degree coverage around each tower to record birds (and bats) entering and exiting the flux. • For at least 2 years (and in addition to the planned monitoring protocol), conduct daily surveys for birds (at all 3 facilities), as well as insects and bats around each tower at the base of and immediately adjacent to the towers in the area cleared of vegetation. Timing of daily surveys can be adjusted to minimize scavenger removal of carcasses. Surveys in the late afternoon might be optimal for bird carcasses, and first light for bat carcasses. • Use dogs for monitoring surveys to detect dead and injured birds that have hidden themselves in the brush, both inside and outside the perimeter of the facility. • To decrease removal of carcasses, implement appropriate raven deterrent actions.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	<u>General Bird Mortality Avoidance Measures</u> The following measures are recommended by the USFWS Forensics Laboratory and shall be implemented to minimize bird mortality from birds attracted to solar facilities: • All potential nesting vegetation (e.g., trees, shrubs) shall be removed within the fenced area of the facility to decrease attractive habitat. • The most current science regarding visual cues to birds that the solar panel is a solid structure shall be implemented. This may include but is not limited to UV-reflective or solid, contrasting bands spaced no further than 28 centimeters from each other. • Power tower operation shall be suspended during peak migration times for indicated species. • Vertical orientation of mirrors shall be avoided whenever possible (for example, mirrors shall be tilted during washing). • If the use of open evaporation ponds is permitted for the project and especially if the water would be considered toxic to wildlife, ponds shall be designed to discourage bird and other wildlife use by properly netting or otherwise covering the pond. • Perch deterrent devices shall be placed on tower railings. • Exclusionary measures shall be employed to prevent bats from roosting in and around the facility. **<u>Minimize Impacts from Solar Flux</u>** Solar thermal developments utilizing solar power tower technologies shall not be sited in or within 1,000 feet of Important Bird Areas (as determined by the County in consultation with Responsible and Trustee agencies), the OVSA, or riparian or other aquatic habitats including lakes, ponds, rivers, streams, and perennial wetland habitats unless potentially significant impacts are avoided. This requirement generally does not apply to seasonal or ephemeral wetland habitats unless deemed necessary by a qualified biologist in light of the wetland's specific habitat value for bird species.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		

	<u>Avoid Impacts from Electric Lines and Lights</u>
	
	The following design measures shall be implemented for applicable projects to minimize impacts to bats and birds:
	
	• Transmission lines and electrical components shall be installed and maintained in accordance with the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) or the most recent guidance to reduce the likelihood of electrocutions of raptors and other large birds, .
	• Transmission lines and electrical components shall be installed and maintained in accordance with the APLIC's Mitigating Bird Collisions with Power Lines: The State of the Art in 1994 (Edison Electric Institute 2004) or the most recent guidance to reduce the likelihood of bird collisions.
	• Low and medium voltage connecting power lines shall be placed underground, if feasible. If burial of the lines is not feasible due to cost or other logistical reasons (for example in shallow bedrock areas) or may cause unacceptable impacts to biological habitats and their dependent species, overhead lines may be installed in compliance with the following requirements:
	  o low and medium voltage overhead lines shall be sited away from high bird crossing locations, such as between roosting and feeding areas or between lakes, rivers, and nesting areas; and/or
	  o low and medium voltage overhead lines shall be installed parallel to tree lines or be otherwise screened so that collision risk is reduced.
	• Permanent communication towers and permanent meteorological towers shall not be constructed with guy wires, if feasible. If guy wires are necessary for permanent or temporary towers, bird flight diverters or high visibility marking devices shall be used. In such cases a monitoring plan shall be developed and carried out to determine the diverters'/devices' effectiveness in reducing bird and bat mortality.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• Facility lighting shall be installed and maintained to prevent upward and side casting of light towards wildlife habitat and motion sensors shall be used. If the FAA requires turbine or tower lighting to alert aircraft, red or white strobe lights shall be used on the structures to minimize avian collision risks. The strobes shall be on for as brief of a period as possible and the time between strobe or flashes shall be the longest allowable. Strobes shall be synchronized so that a strobe effect is achieved and towers are not constantly illuminated. • Lights with sensors and switches shall be used to keep lights off when not required. • The use of high-intensity lighting, steady-burning, or bright lights such as sodium vapor or spotlights shall be minimized.	
Impacts to special status natural communities (i.e., vegetation communities of limited distribution statewide or within a county or region) could occur as a result of implementation of the REGPA if construction and/or operation of the future solar developments results in the disturbance or loss of protected natural communities.	**BIO-19: Minimize impacts to special status natural communities and protected natural areas.** Solar development authorized under the REGPA will not be sited within any special status natural communities or protected natural areas. If solar development is sited adjacent to any special status natural communities or protected natural areas, a management plan will be developed in consultation with CDFW and/or USFWS. The management plan will address the potential offsite effects of the construction and on-going operations of the facility on special status species including but not limited to the effects of human disturbance, noise, nighttime maintenance activities, increased lighting, increased traffic on desert roads, and barriers to movement for special status species. The management plan will also address potential mechanisms of offsite habitat degradation such as introduction of invasive weeds, introduction or attraction of feral animals or other species attracted to areas with anthropogenic disturbance, hydrologic disruption due to groundwater impacts or alteration of surface drainage patterns, and increased risk of wildfires. The management plan will also outline the specific measures to be undertaken to avoid and/or minimize indirect effects of the solar development on the adjacent sensitive habitat and special status species and include a plan for long term monitoring of the adjacent habitat as well as an adaptive management plan.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	If riparian communities (other than water birch riparian scrub – a special status natural community that must be avoided) are present in a project area, impacts to riparian communities shall be avoided or minimized by implementing the following measures: • The project shall be redesigned or modified to avoid direct and indirect impacts on riparian communities, if feasible. • Riparian communities adjacent to the project site shall be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the riparian vegetation. Depending on site-specific conditions, this buffer may be narrower or wider than 20 feet in coordination with the project biologist. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • The potential for long term loss of riparian vegetation shall be minimized by trimming vegetation rather than removing the entire shrub. Shrub vegetation shall be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration of the species. Cutting shall be limited to a minimum area necessary within the construction zone. This type of removal shall be allowed only for shrub species (all trees shall be avoided) in areas that do not provide habitat for sensitive species (e.g., willow flycatcher). • If riparian vegetation is removed as part of a project, the loss of riparian vegetation shall be mitigated to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including CDFW and USFWS). Compensation shall be provided at a minimum 1:1 ratio (1 acre restored or created for every 1 acre removed) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan shall be developed and implemented that describes how riparian habitat shall be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and federal agencies.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
Construction and maintenance activities associated with future projects implemented under the REGPA could result in disturbance or loss of waters of the US and/or State. These wetlands or other waters of the US/State could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction related activities.	**BIO-20: Minimize impacts to waters of the US/State, including wetlands.** The following measures apply to all projects developed under the REGPA that are determined during the project level biological resource evaluation to have the potential to impact waters of the US or waters of the State, including wetlands, and shall be implemented to avoid, minimize, and mitigate for such impacts. These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, the project proponent shall ensure that the contractor incorporates all state and federal permit conditions into construction specifications. • Wetlands and other waters of the US/State shall be delineated on the project site using both USACE and CDFW definitions of wetlands. USACE jurisdictional wetlands shall be delineated using the methods outlined in the USACE 1987 Wetlands Delineation Manual and the Arid West Manual. This information shall be mapped and documented as part of the CEQA documentation, as applicable, and in wetland delineation reports. All applicable permits shall be obtained prior to impacting waters of the US/state including CWA Section 404 and 401 permits from the USACE and the RWQCB, respectively, and a Streambed Alteration Agreement from CDFW. • Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter waters of the state and/or waters of the US. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• Wetland habitats that occur near the project site shall be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions and permit requirements, this buffer may be wider than 20 feet in coordination with the project biologist. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area. • Installation activities shall be avoided in saturated or ponded wetlands during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, shall be used. • Where determined necessary by resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation. • Exposed slopes and stream banks shall be stabilized immediately on completion of installation activities. Other waters of the US shall be restored in a manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system. • In highly erodible stream systems, banks shall be stabilized using a non-vegetative material that will bind the soil initially and break down within a few years. If the project engineers determine that more aggressive erosion control treatments are needed, geotextile mats, excelsior blankets, or other soil stabilization products shall be used. • During construction, trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of drainages shall be removed in a manner that minimizes disturbance of the drainage bed and bank.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES (cont.)		
	• If wetlands are filled or disturbed as part of the highway project, compensation will be implemented for the loss of wetland habitat to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, and USACE). The compensation shall be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of on- site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan shall be developed and implemented if on-site or off-site restoration or creation is chosen. The plan shall describe how wetlands shall be created and monitored for the duration established by the regulatory agency.	
Impacts to wildlife movement or corridors may could occur as a result of implementation of the. Project activities that would interfere with the movement of resident or migratory species or impede fish or wildlife corridors, or nursery habitat would be considered to be a potentially significant impact.	**BIO-21: Minimize impacts to movement or migratory corridors or native wildlife nursery sites.** Solar development authorized under the REGPA should not be sited in or within 1,000 feet of any areas determined by the County in consultation with Responsible and Trustee agencies to be Important Bird Areas, missing links, or desert tortoise connectivity areas unless potentially significant impacts are avoided.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
The spread of invasive plant species or noxious weeds could occur as a result of implementation of the REGPA. Invasive species impacts would have the potential to cause an adverse affect on a variety of special status species and sensitive natural communities through alteration of a broad range of ecological interactions. This would be a potentially significant impact.	**BIO-22: Minimize impacts to invasive plant species or noxious weeds.** For projects implemented under the REGPA that are determined during the project level biological resource evaluation to have the potential to result in the spread of invasive plant species or noxious weeds, the following mitigation measures shall be implemented: To prevent the introduction and spread of noxious weeds, a project-specific integrated weed management plan shall be developed for approval by the permitting agencies, which would be carried out during all phases of the project. The plan shall include the following measures, at a minimum, to prevent the establishment, spread, and propagation of noxious weeds: • The area of vegetation and/or ground disturbance shall be limited to the absolute minimum and motorized ingress and egress shall be limited to defined routes. • Project vehicles shall be stored onsite in designated areas to minimize the need for multiple washings of vehicles that re-enter the project site. • Vehicle wash and inspection stations shall be maintained onsite and the types of materials brought onto the site shall be closely monitored. • The tires and undercarriage of vehicles entering or re-entering the project site shall be thoroughly cleaned. • Native vegetation shall be re-established quickly on disturbed sites. • Weed Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions. • Use certified weed-free straw, hay bales, or equivalent for sediment barrier installations.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		

Implementation of the REGPA has the potential to result in significant impacts to special status plants and wildlife, riparian habitats and other sensitive natural communities, and waters of the US, and/or state.	**BIO-23: Implement general design guidelines to minimize impacts to biological resources.**
	
	All projects authorized under the REGPA will incorporate the following design guidelines as applicable in coordination with the County:
	
	• Design and site the project, in consultation with the permitting agencies, to avoid or minimize impacts to sensitive and unique habitats and wildlife species. Locate energy generation facilities, roads, transmission lines, and ancillary facilities in the least environmentally sensitive areas (such as away from riparian habitats, streams, wetlands, vernal pools, drainages, sand dunes, critical wildlife habitats, wildlife conservation, management, other protected areas, or unique plant assemblages).
	  • Design facilities to use existing roads and utility corridors as much as possible to minimize the number and length/size of new roads, laydown, and borrow areas.
	  • Design transmission line poles, access roads, pulling sites, storage, and parking areas to avoid special status species or unique plant assemblages adjacent to linear facilities.
	  • Locate and/or design facilities to minimize or mitigate wildlife movement disruptions.
	  • Locate and/or design facilities to minimize or mitigate wildlife movement disruptions.
	  • Design facilities to discourage their use as bird perching, drinking, or nesting sites.
	  • Design facility lighting to prevent side casting of light toward wildlife habitat and skyward protection of light that may disorient night-migrating birds.
	  • Avoid using or degrading high value or large intact habitat areas, such as areas identified as sensitive natural habitat, Wilderness Areas, Areas of Critical Environmental Concern, critical habitat; riparian, sand dunes.
	  • Avoid severing movement and connectivity corridors. Consider existing conservation investments such as protected areas and lands held in trust for conservation purposes.
		Significant and Unavoidable

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
BIOLOGICAL RESOURCES (cont.)		
	• Locate facilities so they do not disrupt sand transport processes nor remove some or all of a sand source that contributes to sand dune systems harboring listed or otherwise sensitive species. Avoid armoring nearby dune system sand sources.	
Implementation of the REGPA has the potential to result in significant impacts to groundwater dependent vegetation primarily within the Owens Valley.	**BIO-24: Minimize impacts to groundwater dependent vegetation.** Any solar development projects or related infrastructure implemented under the REGPA shall comply with the terms of the Inyo County/Los Angeles Long Term Water Agreement. A qualified biologist/botanist shall evaluate the potential for any project implemented under the REGPA to impact groundwater dependent vegetation. If the qualified biologist/botanist determines that the project has the potential to impact groundwater dependent vegetation, a groundwater dependent vegetation management plan will be prepared. The plan will include an evaluation of the potential impacts to groundwater dependent vegetation and appropriate measures to avoid or reduce the impacts to the extent feasible. The plan shall be prepared in coordination with the County and should describe any appropriate monitoring, such as vegetation and/or water table monitoring, and prescribe mitigation to offset the impacts of the project on groundwater dependent vegetation as deemed appropriate by the qualified biologist in coordination with the County.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES		
Implementation of future projects associated with the REGPA has the potential to cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines.	**CUL-1a: Designate project Cultural Resources Staff.** Project Cultural Resources Specialist. Prior to the approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination by the County Planning Department, a cultural resources specialist whose training and background conforms to the US Secretary of Interior's Professional Qualifications Standards, as published in Code of Federal Regulations Title 36, part 61 shall be retained by the project owner to conduct a cultural resources inventory, evaluate an resources, produce a Cultural Resources Management and Treatment Plan and other related plans for the approved project and to implement any required plans and mitigation, as necessary as determined by the cultural resource specialist. Their qualifications shall be appropriate to the needs of the project. If the project primarily impacts resources archaeological in nature, the cultural resources specialist shall have a background in archaeology, anthropology or cultural resource management. If the project impacts primarily built environment resources, the cultural resources specialist shall have a background in architectural history. Resumes of the proposed cultural resources staff shall be submitted to the County Planning Department or other CEQA lead agency for review and approval. The Monitoring and Treatment Plan (Mitigation Measure CUL-1c) shall be prepared and implemented under the direction of the cultural resources specialist and shall address and incorporate CUL-1a through CUL-1g. Additional Cultural Resources Staff. The project's cultural resources specialist may obtain the services of specialists, cultural resources monitors and field crew if needed, to assist in identification, evaluation, mitigation, monitoring, and curation activities. Cultural Resources Staff shall have a Bachelor's degree in anthropology, archaeology, history, architectural history or related field, and demonstrated field experience. These individuals must also meet local lead agency qualifications and their resumes must be reviewed and approved by local lead agency staff prior to beginning work.	Significant and Unavoidable

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES (cont.)		
	CUL-1b: Draft a Historical Resources Treatment Plan. To mitigate the potential impacts on historical resources identified during inventory of the project area, a treatment plan for historical resources shall be developed by, depending on the nature of the resources identified, an archaeologist and/or architectural historian who meets the Secretary of Interior's Professional Qualifications Standards. This treatment plan would include data recovery plans that would address National Register of Historic Places/California Register for Historic Resources-eligible cultural resources that would be impacted by the project by requiring some level of extracting the scientific value and analysis of the resources prior to development. **CUL-1c: Draft a Monitoring and Treatment Plan.** To mitigate the potential impacts related to inadvertent discovery of archaeological resources during construction, the project proponents shall have a Secretary of the Interior-qualified archaeologist implement a monitoring program and an unanticipated archaeological resource treatment plan. The qualified archaeologist will evaluate any resources uncovered during ground disturbing activities implement appropriate treatment as specified in the archaeological resource treatment plan. During all phases of the project that include ground disturbance, these ground-disturbing activities will be observed by an archaeological monitor, as determined necessary by the archaeologist. a. If, during the course of monitoring, a potentially significant resource is discovered, the qualified archaeologist will have the authority to stop or redirect ground disturbing activities away from the resource until it can be evaluated. b. If previously unknown cultural deposits are discovered during the course of construction, such as previously undiscovered stratified cultural deposits, a testing program will be implemented to evaluate the stratified cultural deposit.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES (cont.)		
	c. A separate Native American monitor shall be retained by the project proponent to monitor ground disturbing activities in and around archaeological resources. The Native American monitor shall be selected through consultation with Native American tribal groups. The Native American monitor shall work in conjunction with the qualified archaeologist. **CUL-1d: Authority to halt project activities.** Prior to the approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination by the County or the relevant CEQA lead agency, the project owner shall submit a written document granting authority to halt project related activities to the project's cultural resources specialist (as defined in Mitigation Measure CUL-1a) and cultural resources monitors in the event of a discovery or possible damage to a cultural resource. Redirection of project related activities shall be accomplished under the direction of the project supervisor in consultation with the cultural resources specialist. The details of this agreement shall be stipulated in the Cultural Resources Management and Treatment Plan as required in Mitigation Measure CUL-1b. **CUL-1e: Cultural Resources Worker Environmental Awareness Program.** Prior to and for the duration of project activities, the project owner shall provide WEAP training to all new workers within their first week of employment at the project site. The training shall be prepared by the Project cultural resources specialist (as defined in CUL-1) in consultation with local Native Americans and shall incorporate the traditions and beliefs of local Native American groups into the presentation. The presentation may be conducted by any qualified cultural resources specialist and a Native American, if possible, and may be presented in the form of a video. A consulting fee or honorarium shall be negotiated with the local Native American consultants and presenter and paid to them for their participation. The training may be discontinued when project activities are completed or suspended, but must be resumed when project activities resume.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
CULTURAL RESOURCES (cont.)		
	The training shall include: 1. A discussion of applicable laws and penalties under the law; 2. Samples or visuals of artifacts that might be found in the project vicinity; 3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed; 4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during ground-disturbance, and the range of variation in the appearance of such deposits; 5. A discussion of what local Native American beliefs are, how those beliefs are related to cultural resources that may be found in the area, and the appropriate respectful behavior towards sacred places and objects; 6. Instruction that all cultural resources specialists have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the project cultural resources specialist (as defined in CUL-1); 7. Instruction that employees are to avoid areas flagged as sensitive for cultural resources; 8. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the project cultural resources specialist (as defined in CUL-1), and that redirection of work would be determined by the project supervisor and the project cultural resources specialist; 9. An informational brochure that identifies reporting procedures in the event of a discovery;	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
CULTURAL RESOURCES (cont.)		
	10. An acknowledgement form signed by each worker indicating that they have received the training which shall be submitted to the County Planning Department and any other CEQA lead agency; and 11. A sticker that shall be placed on hard hats indicating that environmental training has been completed. **CUL-1f: Cultural Resources Reporting.** The project cultural resources specialist shall document results in interim and final reports as necessary. The contents and timing of these reports shall be stipulated in the Cultural Resources Management and Treatment Plan (CUL-1b). Final reports for archaeological resources, human remains, and some landscapes, shall be written by or under the direction of a Secretary of the Interior qualified archaeologist or architectural historian as appropriate for the project. Reports shall be provided in the California Office of Historic Preservation's Archaeological Resource Management Reports: Recommended Contents and Format and local agency formats. Final documents shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, Department of Parks and Recreation 523 series forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System and the State Historic Preservation Officer shall be included as appendices. **CUL-1g: Curation of Cultural Resources Collections.** All archaeological materials retained as a result of the cultural resources investigations (survey, testing, data recovery) shall be curated in accordance the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES (cont.)		
Implementation of future projects associated with the REGPA may disturb human remains, including those interred outside of formal cemeteries.	**CUL-2: Incidental Discovery of Human Remains.** In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie potential remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or are believed to be Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. In accordance with Section 5097.98 of the California Public Resources Code, the NAHC must immediately notify those persons it believes to be the most likely descendant of the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the County, the disposition of the human remains. Should human remains be discovered at any time during construction of the Project, construction in the vicinity would halt and the County Coroner would be contacted immediately. If the Coroner determines that the remains do not require an assessment of cause of death and are probably Native American, then the NAHC would be contacted to identify the Most Likely Descendant.	Significant and Unavoidable
Implementation of future projects associated with the REGPA has the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**PALEO-1a: Protect Paleontological Resources.** Project developers shall document in a paleontological resources assessment report whether paleontological resources exist in a project area on the basis of the following: the geologic context of the region and site and its potential to contain paleontological resources (including the fossil yield potential), a records search of institutions holding paleontological collections from California desert regions, a review of published and unpublished literature for past paleontological finds in the area, and coordination with paleontological researchers working locally in potentially affected geographic areas (or studying similar geologic strata).	Significant and Unavoidable

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES (cont.)		
	If paleontological resources are present at the site or if the geologic units to be encountered by the project (at the surface or the subsurface) have a high/very high or moderate/unknown fossil yield, a Paleontological Resources Management Plan shall be developed. 1. The plan shall include the following types of requirements: 2. The qualifications of the principal investigator and monitoring personnel 3. Construction crew awareness training content, procedures, and requirements 4. Any measures to prevent potential looting, vandalism, or erosion impacts 5. The location, frequency, and schedule for on-site monitoring activities 6. Criteria for identifying and evaluating potential fossil specimens or localities 7. A plan for the use of protective barriers and signs, or implementation of other physical or administrative protection measures 8. Collection and salvage procedures 9. Identification of an institution or museum willing and able to accept any fossils discovered 10. Compliance monitoring and reporting procedures If the geologic units that would be affected by the project have been determined to have low fossil yield potential, paleontological resources shall be included as an element in construction worker awareness training. The training shall include measures to be followed in the event of unanticipated discoveries, including suspension of construction activities in the vicinity.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
CULTURAL RESOURCES (cont.)		
	The Paleontological Resources Management Plan shall evaluate all of the construction methods proposed, including destructive excavation techniques. Where applicable, the principal investigator shall include in the plan an evaluation of the potential for such techniques to disturb or destroy paleontological resources, an evaluation of whether loss of such fossils would represent a significant impact, and discussion of mitigation or compensatory measures (such as recordation/recovery of similar resources elsewhere on the site) that are necessary to avoid or substantially reduce the impact.	
GEOLOGY AND SOILS		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially significant impacts related to geology and soils.	**GEO-1: Conduct site-specific geotechnical investigations.** Site-specific geotechnical investigations will be completed for all applicable proposed development within the individual SEDAs and the OVSA, and the potential off-site transmission corridors associated with the Charleston View, Chicago Valley, and Trona SEDAs (if applicable), prior to final project design approval. These investigations will identify site-specific criteria related to considerations such as grading, excavation, fill, and structure/facility design. All applicable results and recommendations from the geotechnical investigations will be incorporated into the associated individual project design documents to address identified potential geologic and soil hazards, including but not necessarily limited to: ground rupture; ground acceleration (ground shaking); soil liquefaction (and related issues such as dynamic settlement and lateral spreading); landslides/slope instability; geologic and soil instability (including compressible/collapsible soils, subsidence, and corrosive soils); and expansive soils. The final project design documents will also encompass applicable standard design and construction practices from sources including the California Building Code (CBC), International Building Code (IBC), and County standards, as well as the results/recommendations of County plan review and on-the-ground geotechnical observations and testing to be conducted during project excavation, grading and construction activities (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications). A summary of the types of remedial measures typically associated with identified potential geologic and soil	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
GEOLOGY AND SOILS (cont.)		
	hazards, pursuant to applicable regulatory and industry standards (as noted), is provided below. The remedial measures identified/recommended as part of the described site-specific geotechnical investigations will take priority over the more general types of standard regulatory/industry measures listed below. • Ground Rupture: (1) locate (or relocate) applicable facilities away from known active (or potentially active) faults and outside of associated CGS Earthquake Fault Zones; and (2) require appropriate (typically 50-foot) building exclusion buffers on either side of applicable fault traces. • Ground Acceleration (Ground Shaking): (1) incorporate applicable seismic loading factors (e.g., IBC/CBC criteria) into the design of facilities such as structures, foundations/slabs, pavement, utilities, manufactured slopes, retaining walls and drainage facilities; (2) use remedial grading techniques where appropriate (e.g., removing/replacing and/or reconditioning unsuitable soils); and (3) use properly engineered fill per applicable industry/regulatory standards (e.g., IBC/CBC), including criteria such as appropriate fill composition, placement methodology, compaction levels, and moisture content. • Liquefaction and Related Effects: (1) remove unsuitable soils and replace with engineered fill (as previously described), per applicable regulatory/industry standards (e.g., IBC/CBC); (2) employ measures such as deep soil mixing (i.e., introducing cement to consolidate loose soils) or use of subsurface structures (e.g., stone columns or piles) to provide support (i.e., by extending structures into competent underlying units); (3) use subdrains in appropriate areas to avoid or reduce near-surface saturation; and (4) design for potential settlement of liquefiable materials through means such as use of post-tensioned foundations and/or flexible couplings for utility connections.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
GEOLOGY AND SOILS (cont.)		
	• Landslides/Slope Instability: (1) construct properly drained shear keys and/or replace susceptible deposits with manufactured buttress fills where appropriate; (2) employ applicable slope laybacks (i.e., shallower slopes) and/or structural setbacks; (3) incorporate structures such as retaining walls and stability fills where appropriate to provide support; and (4) implement proper slope drainage and landscaping where applicable per established regulatory/industry standards (e.g., IBC/CBC). • Geologic and Soil Instability: (1) use standard efforts such as over-excavation and recompaction or replacement of unsuitable soils with engineered fill, and enhanced foundation design in applicable areas (e.g., post-tensioned or mat slab foundations); (2) use engineered fill, subdrains, surcharging (i.e., loading prior to construction to induce settlement) and/or settlement monitoring (e.g., through the use of settlement monuments) in appropriate areas; (3) implement groundwater withdrawal monitoring/restrictions per established legal/regulatory/industry standards (if applicable); and (4) remove unsuitable deposits and replace with non-corrosive fill, use corrosion-resistant construction materials (e.g., corrosion-resistant concrete and coated or non-metallic facilities), and install cathodic protection devices (e.g., use of a more easily corroded "sacrificial metal" to serve as an anode and draw current away from the structure to be protected) per established regulatory/industry standards (e.g., IBC/CBC). • Expansive Soils: (1) replace and/or mix expansive materials with non-expansive fill; and (2) cap expansive soils in place with an appropriate thickness of non-expansive fill per established regulatory/industry standards (e.g., IBC/CBC).	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
GREENHOUSE GAS EMISSIONS		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially significant contributions to GHG emissions during construction and operation of the facilities.	**GHG-1: Prepare Site-Specific Greenhouse Gas Report.** Prior to approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination for a solar energy project, a site-specific greenhouse gas technical report will be prepared and approved by the County. The site-specific technical report will identify project-specific emissions to ensure compliance with the interim SCAQMD GHG thresholds, as well as measures to reduce operational greenhouse gas emissions. The technical report will be completed and approved by the County prior to the County's action.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
HAZARDS AND HAZARDOUS MATERIALS		
Implementation of the REGPA could result in potentially significant impacts related to: (1) the known or potential occurrence of hazardous material sites in all nine SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs; (2) airport-related hazards for the Laws, Trona, Charleston View, and Sandy Valley SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs; (3) school-related hazards for the OVSA; and (4) wildfire hazards for all nine SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs.	**HAZ-1: Conduct site-specific Phase I ESA.** Site-specific Phase I Environmental Site Assessments (ESAs) shall be completed for all proposed development projects within the nine individual SEDAs and the OVSA, as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. Specifically, Phase I ESA investigations shall be conducted for the noted areas to identify the potential occurrence of hazardous materials and Recognized Environmental Conditions, (RECs, as defined in ASTM International E1527-05, Section 1.1.1), potentially involving the presence of contaminated soil or groundwater, and/or structures or facilities containing hazardous materials such as asbestos insulation, lead-based paint and polychlorinated biphenyls. Phase I investigations shall include: (1) appropriate regulatory database records review; (2) site reconnaissance; (3) review of appropriate maps, aerial photographs and other pertinent documents; (4) interviews with current/previous property owners, local government/industry officials, and other individuals with knowledge of the property and/or local environmental conditions; (5) documentation of known or potential RECs; and (6) identification of recommendations to address RECs or other concerns, if applicable (including Phase II ESA investigations, as outlined below). Depending on the results of the described Phase I ESAs, one or more Phase II ESA investigations shall be conducted if identified as part of the Phase I recommendations. Phase II ESAs consist of "intrusive" investigations, in which original samples of soil, groundwater and/or building materials are collected and submitted for laboratory analysis to identify applicable contaminates. Based on the results of this testing, the Phase II ESAs shall identify the type and extent of REC (or other) contamination, and provide appropriate remedial measures to address associated hazards. Typical remedial measures may include efforts such as removal and proper disposal of contaminated materials (or on-site treatment and reuse, if applicable), or in situ treatments such as oxidation (use of aerobic bacteria to accelerate natural attenuation of organic contaminants) or bioremediation (e.g., using bacteria to remove contaminates from groundwater).	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
HAZARDS AND HAZARDOUS MATERIALS (cont.)		
	All ESAs conducted for the proposed project shall be prepared in conformance with applicable regulatory and industry standards, including ASTM International E1527-05 Standard Practice for Environmental Site Assessments, and Code of Federal Regulations Part 312, Standards and Practices for All Appropriate Inquiries. Applicable results and recommendations from the described Phase I and Phase II investigations shall be incorporated into the associated individual final project design documents to address identified potential hazardous material concerns. **HAZ-2: Conduct site-specific Airport Safety Investigations.** Site-specific Airport Safety Investigations shall be completed for all proposed development projects in the Laws, Trona, Charleston View, and Sandy Valley SEDAs, the OVSA, and related potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs that are within two miles of a public or private airport prior to final project design approval. These investigations will assess the site-specific design and location of proposed facilities to determine if they are compatible with existing and planned future activities at nearby airports. The Airport Safety Investigations shall utilize applicable criteria from proposed project design information (e.g., facility locations and heights), airport comprehensive land use plans and/or management plans (if applicable), the Inyo County Airport Hazard Overlay Ordinance, and/or other pertinent information related to considerations such as airport hazard zones and traffic patterns, to identify potential safety conflicts. If such conflicts are identified, the Airport Safety Investigations shall provide remedial measures to address these concerns, potentially including efforts such as relocating and/or redesigning proposed facilities to avoid potential hazards. Applicable results and recommendations from the described Airport Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential airport-related concerns.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
HAZARDS AND HAZARDOUS MATERIALS (cont.)		
	HAZ-3: Conduct site-specific School Safety Investigations. Site-specific School Safety Investigations shall be completed for all proposed development projects in the OVSA that are within one-quarter mile of an existing or proposed school, prior to final project design approval. These investigations will assess the site-specific design and location of proposed facilities to determine if they are compatible with existing and planned future activities at schools located within one-quarter mile. The School Safety Investigations shall utilize applicable criteria from proposed project design information, such as proposed hazardous material use/storage, associated facility locations, and required measures in Hazardous Materials Business Emergency/Contingency Plans and/or Risk Management Plans (e.g., proper inventory documentation, storage/containment, transport, employee training, and spill response/clean-up measures) to assess potential hazards to local schools from the use or emission of hazardous materials or wastes. If such hazards are identified, the School Safety Investigations shall provide remedial measures to address these concerns, potentially including efforts such as relocating (i.e., outside of the one-quarter mile boundary) and/or redesigning proposed facilities (e.g., providing enclosures or secondary containment) to avoid potential hazards. Applicable results and recommendations from the described School Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential school-related concerns. **HAZ-4: Conduct site-specific Wildfire Safety Investigations.** Site-specific Wildfire Safety Investigations shall be completed for all proposed projects within the nine individual SEDAs and the OVSA, as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), that are in areas rated as moderate or high for wildfire hazards by California Department of Forestry and Fire Protection prior to final project design approval. Specifically, the Wildfire Safety Investigations shall be conducted for the noted areas to identify site-specific fire hazard ratings and associated risks to people and structures at proposed development sites. The Wildfire Safety Investigations shall include assessment of the following criteria for the	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
HAZARDS AND HAZARDOUS MATERIALS (cont.)		
	noted areas and surrounding environments: (1) fire history; (2) fuel (vegetation) types; (3) climatic conditions (including wind patterns); (4) projected fire behavior (including flame lengths) from computer modeling (e.g., BehavePlus Fire Modeling System 5.0.4); (5) documentation of known or potential wildfire hazards to on-site people and structures; and (6) identification of remedial measures, if applicable (per applicable regulatory standards such as the California Building, Fire, and Residential Codes), potentially including efforts such as the use of fuel modification, structural features (e.g., non-combustible materials and fire/ember/smoke barriers), alarm systems, and/or automatic sprinklers. Applicable results and recommendations from the described Wildfire Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential wildfire-related concerns.	
HYDROLOGY AND WATER QUALITY		
Implementation of a solar facility project as part of the REGPA would result in potentially significant impacts related to hydrologic conditions (including drainage alteration, runoff rates and amounts, flood hazards, and existing/planned storm drain system capacity); groundwater resources; and long-term water quality.	**HYD-1: Conduct site-specific hydrologic investigations.** Site-specific hydrologic investigations will be completed for applicable proposed solar facility development projects within the individual SEDAs and the OVSA (i.e., those with grading, excavation or other activities potentially affecting hydrologic conditions, as determined by the County), as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. All applicable results and recommendations from these investigations will be incorporated into the associated individual final project design documents to address identified potential hydrologic concerns, including but not necessarily limited to: drainage alteration, runoff rates and amounts, flood hazards, and existing/planned storm drain system capacity. The final project design documents will also encompass applicable standard design and construction practices from sources including National Pollutant Discharge Elimination System and County standards, as well as the results/recommendations of County plan review (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications). A summary of the types of remedial measures typically associated with identified potential hydrologic	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
HYDROLOGY AND WATER QUALITY (cont.)		
	concerns, pursuant to applicable regulatory and industry standards (as noted), is provided below. The remedial measures identified/recommended as part of the described site-specific hydrologic investigations will take priority over the more general types of standard regulatory/industry measures listed below. • Drainage Alteration: (1) locate applicable facilities outside of surface drainage courses and drainage channels; (2) re-route surface around applicable facilities, with such re-routing to be limited to the smallest area feasible and re-routed drainage to be directed back to the original drainage course at the closest feasible location (i.e., the closest location to the point of diversion); and (3) use drainage structures to convey flows within/through development areas and maintain existing drainage patterns. • Runoff Rates and Amounts: (1) minimize the installation of new impervious surfaces (e.g., by surfacing with pervious pavement, gravel or decomposed granite); and (2) use flow regulation facilities (e.g., detention/retention basins) and velocity control structures (e.g., riprap dissipation aprons at drainage outlets), to maintain pre-development runoff rates and amounts. • Flood Hazards: (1) work to locate proposed facilities outside of mapped 100-year floodplain boundaries; (2) based on technical analyses such as Hydrologic Engineering Center-River Analysis System (HEC-RAS) studies, restrict facility locations to avoid adverse impacts related to impeding or redirecting flood waters; and (3) based on HEC-RAS studies, use measures such as raised fill pads to elevate proposed structures above calculated flood levels, and/or utilize protection/containment structures (e.g., berms, barriers or waterproof doors) to avoid flood damage. • Storm Drain System Capacity: (1) implement similar measures as noted above for runoff rates and amounts; and (2) utilize additional and/or enlarged facilities to ensure adequate on- and off-site storm drain system capacity.	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
HYDROLOGY AND WATER QUALITY (cont.)		
	HYD-2: Conduct site-specific groundwater investigations. Site-specific groundwater investigations will be completed for all proposed solar facility development projects within the individual SEDAs and the OVSA proposing to utilize groundwater resources, prior to final project design approval. These investigations will identify site-specific criteria related to considerations such as local aquifer volumes and hydrogeologic characteristics, current/proposed withdrawals, inflow/recharge capacity, and potential effects to local aquifer and well levels from proposed project withdrawals. All applicable results and recommendations from these investigations will be incorporated into the associated individual project design documents to address identified potential impacts to groundwater resources (per applicable regulatory standards), with all related requirements to be included in associated engineering/design drawings and construction contract specifications. A summary of the types of remedial measures typically associated with identified potential effects to groundwater resources is provided below. The remedial measures identified/recommended as part of the described site-specific groundwater investigations will take priority over the more general types of standard measures listed below. • Aquifer/Well drawdown: (1) monitor local aquifer and private/production well levels to verify the presence or absence of project-related effects during pre-construction, construction, and operation periods (based on a methodology and monitoring schedule approved by the RWQCB and County); (2) document background and pre-construction groundwater conditions and comparable project-related construction and operation trends, along with related factors such as precipitation levels and groundwater budgets; (3) prepare scaled maps depicting the associated site(s), existing and proposed monitoring well locations, relevant natural (e.g., springs and groundwater-dependent vegetation) and other features (e.g., reservoirs), and pre- post-project groundwater contours, along with a description of cumulative water level changes; (4) restrict project-related	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
HYDROLOGY AND WATER QUALITY (cont.)		
	groundwater withdrawals to appropriate levels to avoid significant adverse effects to local aquifers/wells and/or other groundwater-dependent uses (e.g., vegetation, springs or other related surface water features), based on thresholds approved by the RWQCB and County; and (5) provide mitigation for affected wells or other uses where applicable, potentially including well modifications (e.g., deepening pumps or wells) and/or financial compensation. • Groundwater Recharge Capacity: (1) reduce the area of on-site impervious surface if appropriate, through increased use of surfacing materials such as gravel, decomposed granite, or pervious pavement; and (2) use facilities such as retention/percolation basins and unlined drainage facilities to increase local infiltration and groundwater recharge. **HYD-3: Conduct site-specific water quality investigations.** Site-specific water quality investigations will be completed for long-term solar facility operations associated with applicable proposed development projects within the individual SEDAs and the OVSA (i.e., those with activities potentially affecting water quality conditions, as determined by the County), as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. All applicable results and recommendations from these investigations will be incorporated into the associated individual final project design documents to address identified potential long-term water quality issues related to conditions such as: anticipated and potential pollutants to be used, stored or generated on-site; the location and nature (e.g., impaired status) of on-site and downstream receiving waters; and project design features to avoid/address potential pollutant discharges. The final project design documents will also encompass applicable standard design practices from sources including National Pollutant Discharge Elimination System and County standards, as well as the results/recommendations of project-related hazardous materials investigations and regulatory standards (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications).	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
HYDROLOGY AND WATER QUALITY (cont.)		
	A summary of the types of BMPs typically associated with identified potential water concerns, pursuant to applicable regulatory and industry standards (as noted), is provided below. The BMPs identified/recommended as part of the described site-specific water quality investigations will take priority over the more general types of standard regulatory/industry measures listed below. • Low Impact Development (LID)/Site Design BMPs: LID/site design BMPs are intended to avoid, minimize and/or control post-development runoff, erosion potential and pollutant generation to the maximum extent practicable by mimicking the natural hydrologic regime. The LID process employs design practices and techniques to effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source through efforts such as: (1) minimizing developed/disturbed areas to the maximum extent feasible; (2) utilizing natural and/or unlined drainage features in on-site storm water systems; (3) disconnecting impervious pervious to slow concentration times, and directing flows from impervious surfaces into landscaped or vegetated areas; and (4) using pervious surfaces in developed areas to the maximum extent feasible. • Source Control BMPs: Source control BMPs are intended to avoid or minimize the introduction of pollutants into storm drains and natural drainages to the maximum extent practicable by reducing on-site pollutant generation and off-site pollutant transport through measures such as: (1) installing no dumping" stencils/tiles and/or signs with prohibitive language (per current County guidelines) at applicable locations such as drainages and storm drain inlets to discourage illegal dumping; (2) designing trash storage areas to reduce litter/pollutant discharge through methods such as paving with impervious surfaces, installing screens or walls to prevent trash dispersal, and providing attached lids and/or roofs for trash containers; (3) designing site landscaping (if applicable) to maximize the retention of native vegetation and use of appropriate native, pest-resistant and/or drought-tolerant varieties to reduce irrigation and pesticide application requirements; and (4) providing secondary containment (e.g., enclosed structures, walls or berms) for applicable areas such as trash or hazardous material use/storage.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
HYDROLOGY AND WATER QUALITY (cont.)		
	Treatment Control/LID BMPs: Treatment control (or structural) BMPs are designed to remove pollutants from runoff to the maximum extent practicable through means such as filtering, treatment or infiltration. Treatment control and/or LID BMPs are required to address applicable pollutants, and must provide medium or high levels of removal efficiency for these pollutants (per applicable regulatory requirements). Based on the anticipated pollutants of concern, potential LID and treatment control BMPs may include (1) providing water quality treatment and related facilities such as sediment basins, vegetated swales, infiltration basins, filtration devices and velocity dissipators to treat appropriate runoff flows and reduce volumes prior to off-site discharge (per applicable regulatory requirements); and (2) conducting regular inspection, maintenance and as-needed repairs of pertinent facilities and structures.	
LAND USE AND PLANNING		
No significant, unavoidable adverse land use and planning impacts would result from implementation of the proposed REGPA.	No mitigation measures are required.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
MINERAL RESOURCES		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially significant impacts to mineral resources related to the loss of regionally or locally important mineral resources, as well as associated potential conflicts with valid mineral entries.	**MIN-1: Conduct site-specific mineral resource investigations.** Site-specific mineral resource investigations will be completed for proposed development projects within the individual SEDAs, the OVSA, and the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. These investigations will include the following elements: (1) descriptions of regional and on-site geologic environments; (2) identification of site-specific potential for the occurrence of mineral resources; (3) assessment of estimated mineral resource quantities and extents (as applicable); (4) evaluation of associated potential for economic resource recovery, including considerations such as supply and demand, and production, processing and transportation costs; (5) determination of the presence of mineral entries such as mining claims and mineral leases, including descriptions of individual mineral entry types, issuing agencies and status; (6) assessment of potential impacts from project implementation to identified regionally- or locally-important mineral resources, associated exploration/recovery efforts, and valid mineral entries; and (7) development of remedial measures to address identified impacts to mineral resources, operations and entries, as feasible, potentially including efforts such as avoidance, use of proposed project development timing or phasing to accommodate mineral operations, or locating proposed project facilities to accommodate multiple use operations (e.g., through shared use of access or infrastructure). All applicable results and recommendations from the described investigations identifying identified potential mineral resource impacts and remedial measures will be incorporated into the associated individual project design documents.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
NOISE		
Implementation of the REGPA (including implementation of utility scale, distributed generation, community scale, and/or facilities) could result in potentially facilities) could result in potentially significant impacts related to: (1) exposure of persons to or generation of noise levels in excess of established standards during project operations; and (2) temporary or periodic increases in ambient noise levels during construction.	**NOI-1: Noise Technical Report for Solar Facilities proposed within 500 feet of Noise-Sensitive Land Uses.** If a proposed utility scale solar energy project resulting from implementation of the REGPA is within 500 feet of a residence or other noise sensitive land use, prior to issuance of a Major Use Permit, a site-specific noise technical report will be prepared and approved by the County. The technical report will verify compliance with all applicable County laws, regulations, and policies during operation of the solar project, including that noise levels would not exceed the relevant thresholds described in the General Plan Noise Element (60 dBA L_{DN} for noise sensitive land uses such as residences, schools, transient lodging and medical facilities). The site specific noise technical report will include project specifications, applicable noise calculations, project design features, applicable BMPs and related information from the REAT's Best Management Practices and Guidance Manual (REAT 2010), and mitigation measures applicable to the project. The technical noise report will address operational related noise sources, as well as noise from the use of generators during an emergency. The technical report will calculate specific anticipated noise and vibration levels from operations in accordance with County standards and provide specific mitigation when noise levels are expected to exceed County standards.	Less Than Significant

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
NOISE (cont.)		
	NOI-2: Construction Noise Reduction Measures. If utility scale solar development resulting from implementation of the REGPA is proposed within 500 feet of a residence or other noise sensitive receptor, the following measures, in addition to applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010), shall be implemented to reduce construction noise to the extent feasible: • Whenever feasible, electrical power will be used to run air compressors and similar power tools. • Equipment staging areas will be located as far as feasible from occupied residences or schools. • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. • Stationary equipment shall be placed such that emitted noise is directed away from sensitive noise receptors. • Stockpiling and vehicle staging areas shall be located as far as practical from occupied dwellings. **NOI-3: Helicopter Noise Control Plan.** In the event that a project site would have limited access and would require the use of helicopters during operation or maintenance of a facility, the applicant will prepare a Helicopter Noise Control Plan that indicates where helicopters would be used and the frequency and duration for such use. The plan shall demonstrate compliance with the noise level limits within the County Noise Element for helicopter noise to properties within 1,600 feet of proposed helicopter use locations.	

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
POPULATION AND HOUSING		
Implementation of the REGPA would result in less than significant impacts to population and housing.	No mitigation measures are required.	Less Than Significant
PUBLIC SERVICES		
Implementation of the REGPA would result in potentially significant impacts associated with fire and police protection services.	**PUB-1: Analyze public safety and protection response times and staff levels for each project.** Site specific analysis of fire and police protection service response times and staffing levels shall be completed for proposed distributed generation and community scale future solar development projects, as deemed appropriate by the County, at the cost of the project applicant, prior to final project design approval of each project. The analysis shall include a determination regarding a project's impact to fire and police protection services and outline feasible measures to maintain adequate response times for fire and police protection services. **PUB-2: Provide onsite security during the construction and long-term operation of the project.** For project sites associated with proposed distributed generation and community scale future solar development projects that are determined through Mitigation Measure PUB-1 to have insufficient law enforcement protection services or significant impacts to law enforcement services, project proponents shall be required to provide adequate, onsite private security for the duration of construction activities and during the long-term operation of the project to the satisfaction of the County. The actual size and configuration of the security detail shall be determined by the County during preparation of the Development Agreement for the future solar energy project.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
PUBLIC SERVICES (cont.)		
	PUB-3: Pay mitigation fees for public safety and protection services. The County shall require project proponents to pay established County development mitigation fees for fire and police protection services. Said fees shall be used to maintain proper staffing levels for fire and police protection services and to sustain adequate response times as required by the County.	
RECREATION		
Implementation of the REGPA would result in less than significant impacts to recreational facilities.	No mitigation measures are required.	Less Than Significant
SOCIOECONOMICS		
Implementation of the REGPA would result in potentially adverse socioeconomic effects related to changes in the local economy, housing availability related to temporary construction workers, and levels of public service provision.	**SOC-1: Minimize impacts on transient housing.** To further off-set potential negative effects and increased demand on transient housing, General Plan Policy ED-4.5, Employ and Train Local Labor, shall be supplemented with the following: For renewable energy projects where the construction schedule exceeds one-year, community-monitoring programs shall be developed that would identify and evaluate transient housing demand and other socioeconomic effects utilizing economic models such as the National Renewable Energy Laboratory's Jobs and Economic Development Impact model. Measures developed for monitoring may include the collection of data reflecting the workforce demands and social effects (such as tracking any demonstrable drop in recreational usership) as a result of increased transient housing demand from construction workers at the local and County level.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
SOCIOECONOMICS (cont.)		
	• Project developers shall work with the County, local chambers of commerce, and/or other applicable local groups to assist transient workers in finding temporary lodging. If temporary lodging is not available, developers of utility scale projects shall consider the feasibility of providing on-site temporary housing accommodations for all projects. **SOC-2: Minimize impacts on County public services.** To further off-set potential negative effects on County public services, Policy ED-4.4 (Renewable Energy Solar Facility Development Beneficial to the Local Economy) shall be supplemented with the following: • Cooperative agreements between project applicants and the County shall be secured prior to issuance of a building permit or project-specific entitlement to ensure the following: • Unless property taxation of a renewable energy installation is deemed sufficient by the County, project applicants shall pay a fair-share public service impact fee. A potential method for estimating a fair-share contribution could be calculated by: [annual service budget] X [estimated number of temporary workers temporarily in-migrating ÷ County population served]. • The public service fee (and formula used for calculating fair-share) shall be adjusted based on the duration of project construction (e.g., a project only lasting 9 months would utilize 75 percent of the annual budget, one lasting 1.5 years would utilize 150 percent of the annual budget, etc.); and	

Table ES-1 (cont.) IMPACTS AND PROPOSED MITIGATION		
Impacts	**Mitigation Measures**	**Significance After Mitigation**
SOCIOECONOMICS (cont.)		
	Project applicants shall maximize the County's receipt of sales and use taxes paid in connection with construction of the project by methods such as including language in construction contracts identifying jobsites to be located within the County and requiring construction contractors to attribute sales and use taxes to the County in their Board of Equalization filings and permits.	
TRANSPORTATION AND CIRCULATION		
Implementation of the REGPA could result in potentially significant traffic impacts related to: (1) construction traffic; (2) air traffic safety hazards; and, (3) design-related traffic hazards.	**TRA-1: Prepare site-specific traffic control plans for individual projects.** Site-specific traffic control plans shall be prepared for all proposed solar energy projects within the individual SEDAs and the OVSA to ensure safe and efficient traffic flow in the area of the solar energy project and within the project site during construction activities. The traffic control plan shall, at minimum, contain project-specific measures to be implemented during construction including measures that address: (1) noticing; (2) signage; (3) temporary road or lane closures; (4) oversized deliveries; (5) construction times; and (6) emergency vehicle access. **TRA-2: Implement recommendations from traffic impact analysis on surrounding roadways and intersections.** Site-specific construction traffic impact analyses shall be prepared for all proposed solar energy projects within the individual SEDAs and the OVSA to evaluate potential traffic impacts on surrounding roadways and intersections during the construction period. Applicable results and recommendations from the project-specific construction traffic impact analysis shall be implemented during the appropriate construction phase to address identified potential construction traffic impacts.	Less Than Significant

Table ES-1 (cont.)
IMPACTS AND PROPOSED MITIGATION

Impacts	Mitigation Measures	Significance After Mitigation
UTILITIES AND SERVICE SYSTEMS		
Utility impacts associated with wastewater, water, stormwater facilities, and solid waste disposal would be less than significant.	No mitigation measures are required.	Less Than Significant
Implementation of the REGPA would result in potentially significant impacts related to the need for new transmission lines to serve future solar development.	**UTIL-1: Projects within the western solar energy group will not exceed a combined maximum of 250 MW or 1,500 acres.** Future projects within the western solar energy group shall be limited to a combined maximum of 250 MW or 1,500 acres of development area). The County shall implement a tracking program to ensure all future solar development projects within the western solar energy group do not exceed 250 MW. Once the 250-MW (or 1,500 acres of development area) is reached, the County shall not approve further projects within the western solar energy group unless project applicants can provide proof of adequate and existing transmission capabilities for the project. **UTIL-2: Projects within the southern and eastern solar energy groups will be required have necessary and /or adequate transmission lines.** Future development within the southern and eastern solar energy groups shall be required to include the necessary transmission lines or provide proof of adequate transmission capabilities for the project.	Less Than Significant

INYO COUNTY RENEWABLE ENERGY GENERAL PLAN AMENDMENT
DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

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APPENDICES

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACEC	Areas of Critical Environmental Concern
Agreement	Inyo County/Los Angeles Long Term Water Agreement
AGR	agricultural supply
amsl	above mean sea level
APLIC	Avian Power Line Interaction Committee
ATV	all-terrain vehicle
Basin	Great Basin Valleys Air Basin
BIA	Bureau of Indian Affairs
BIOL	biological habitats of special significance
BLM	Bureau of Land Management
BMPs	best management practices
BP	Before Present
C-5	commercial recreation
CAA	Clean Air Act
CAISO	California Independent System Operator
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CAT	Climate Action Team
CBC	California Building Code
CBD	Central Business District
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Census Designated Place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resource Information System
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent

COLD	cold freshwater habitat
COMM	commercial and sport fishing
County	Inyo County
CPUC	California Public Utilities Commission
CREZ	Competitive Renewable Energy Zones
CRHR	California Register for Historic Resources
CT	Census Tract
CTPG	California Transmission Planning Group
CWA	Clean Water Act
dB(A)	A-weighted decibels
DOD	US Department of Defense
DOE	US Department of Energy
DPM	diesel particulate matter
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substance Control
du/ac	dwelling unit/acre
DWMA	Desert Wildlife Management Area
DWR	Department of Water Resources
EHSD	Environmental Health Services Department
EIR	Environmental Impact Report
ESA	environmental site assessment
F	fluoride
FAA	Federal Aviation Administration
Fe	iron
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FLD	flood peak attenuation/flood water storage
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FPD	Fire Protection Districts
FR	Forest
FRAs	Federal Responsibility Areas
FRSH	freshwater replenishment
FTA	Federal Transit Administration
Gal	centimeter per second squared
GBUAPCD	Great Basin Unified Air Pollution Control District
GHG	greenhouse gas
GI	General Industrial
GWR	groundwater recharge
H_2O	water vapor
H_2S	hydrogen sulfide
HA	hydrologic area
HC	Heavy Commercial/Commercial Service
HCP	Habitat Conservation Plan

HEC-RAS	Hydrologic Engineering Center-River Analysis System
HELIX	HELIX Environmental Planning, Inc.
HFCs	hydrofluorocarbons
HMBEP	Hazardous Materials Business Emergency/ Contingency Plan
HSA	hydrologic subarea
HU	Hydrologic Unit
I-	Interstate
IBC	International Building Code
ICC	Inyo County Code
ICIWMD	Inyo County Waste Integrated Waste Management Department
IND	industrial service supply
IPCC	Intergovernmental Panel on Climate Change
JEDI	Jobs and Economic Development Impact
JESD	Joint Elementary School District
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
LCFS	low-carbon fuel standard
L_{DN}	day-night average noise level
L_{EQ}	equivalent energy level
LI	Light Industrial
LID	Low Impact Development
LORP	Lower Owens River Project
LOS	level of service
LRAs	Local Responsibility Areas
LUST	leaking underground storage tank
M-2	light industrial
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
mg/l	milligrams per liter
MGR	migration of aquatic organisms
M_{max}	Maximum Moment Magnitude
MMT	million metric tons
Mn	manganese
MOU	Memorandum of Understanding
MRZ	Mineral Resource Zone
MSA	Metropolitan Statistical Area
MT	metric tons
MUN	municipal and domestic supply
MW	megawatt
Na	sodium
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NAWS	Naval Air Weapons Station
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_3	nitrate
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NRCS	Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NREL	National Renewable Energy Laboratory
NRHP	National Register of Historical Places
O_3	ozone
OHP	Office of Historic Preservation
OHV	off-highway vehicle
OS	Open Space
OSR	Open Space and Recreation
OVLMP	Owens Valley Land Management Plan
OVSA	Owens Valley Study Area
Pb	lead
PEIR	Program Environmental Impact Report
PEIS	Program Environmental Impact Statement
PF	Public Service Facilities
PFCs	perfluorocarbons
pH	measure of acid and base properties
PILT	Payment-in-lieu of Taxes
$PM_{2.5}$	Particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10}	Particulate matter less than 10 microns in aerodynamic diameter
POW	hydropower generation
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PV	photovoltaic
PVC	polyvinyl chloride
RARE	rare, threatened or endangered species
RC	Retail Commercial
RCRA	Resource Conservation and Recovery Act
RE	Residential Estate
REAT	Renewable Energy Action Team
REC	Recognized Environmental Conditions Resort/Recreational
REC-1	contact recreation
REC-2	non-contact recreation
REDA	Renewable Energy Development Area
REGPA	Renewable Energy General Plan Amendment
RETI	Renewable Energy Transmission Initiative

RL	Residential Low Density
RM	Residential Medium Density
RMH	Residential Medium-high Density
RMP	Risk Management Plan
RMS	root mean square
ROD	Record of Decision
ROW	right-of-way
RP	Rural Protection
RPS	Renewable Portfolio Standard
RR	Rural Residential
RRH	Rural High Density
RRM	Residential Rural Medium Density
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
S	sulfate
SAL	inland saline water habitat
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SEDA	Solar Energy Development Area
SEZ	Solar Energy Zone
SF_6	sulfur hexafluoride
SFL	State and Federal Lands
SIP	State Implementation Plan
SLC	California State Lands Commission
SMARA	Surface Mining and Recovery Act of 1975
SO_2	sulfur dioxide
SPWN	spawning, reproduction, and/or early development
SR	State Route
SRAs	State Responsibility Areas
SRMA	Special Recreation Management Areas
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCP	Traditional Cultural Property
TDS	total dissolved solids
THPO	Tribal Historic Preservation Officer
TL	Tribal Lands
TMDL	total maximum daily load
US	United States
USACE	US Army Corps of Engineers
USC	United States Code
USD	Unified School District
USDA	US Department of Agriculture

USEPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
USGS	US Geological Service
UST	underground storage tank
VdB	vibration decibels
VEA	Valley Electric Association, Inc.
VOC	volatile organic compounds
VRI	visual resource inventory
VRM	Visual Resource Management
WARM	warm freshwater habitat
WDR	Waste Discharge Requirements
WEAP	worker environmental awareness program
WILD	wildlife habitat
WQE	water quality enhancement

1.0 INTRODUCTION

1.1 OVERVIEW

The County of Inyo (County) prepared this Program Environmental Impact Report (PEIR) in accordance with the requirements of the California Environmental Quality Act (CEQA), the State CEQA Guidelines, as amended, and County requirements for the proposed Renewable Energy General Plan Amendment (REGPA). The REGPA is the proposed project addressed in this PEIR. The REGPA involves identifying new and modified goals, policies, and implementation measures for addressing solar energy development in the Inyo County General Plan (Inyo County 2001, as amended). Other forms of renewable energy development (such as wind) are not addressed by the proposed REGPA. This REGPA is intended to help achieve coordinated solar energy development in the County by creating a vision for landholders, and solar energy developers and investors in the County while taking into account regional policies and plans, as well as the development goals and policies of the County. The REGPA is intended to regulate solar energy development by focusing potential development in identified Solar Energy Development Areas (SEDAs) and capping energy production levels and associated acreage footprints of individual solar energy projects.

For purposes of analysis, the County has identified eight areas that may be appropriate for solar energy development projects, called SEDAs, and the Owens Valley Study Area (OVSA). Potential solar projects in the OVSA will be considered in a subsequent planning process, separate from the REGPA, which will identify a set of criteria for identifying and mapping areas appropriate within the OVSA for solar energy development. Still, limitations on the size of projects and transmission policies pertaining to the OVSA are established in the REGPA. This PEIR analyzes potential environmental impacts from implementation of the REGPA and from potential solar energy development in the proposed SEDAs and the OVSA from an overall program perspective — not from an individual project perspective. Therefore, before an individual solar project could be approved within a SEDA, project-specific analysis would need to be performed and the scope of applicable environmental review determined.

This PEIR is an informational document to inform decision-makers and the public of the potential environmental consequences of approving the proposed REGPA. This PEIR contains mitigation measures designed to help avoid or minimize significant environmental impacts from future development under the REGPA. A detailed description of the proposed project and project alternatives are contained in Section 3.0 and Section 6.0, respectively.

1.2 PURPOSE AND LEGAL AUTHORITY

In accordance with the CEQA of 1970 (Public Resources Code [PRC] Section 21000 et seq.), if a lead agency determines that there is substantial evidence in light of the whole record that a project may have a significant effect on the environment, the agency must prepare an Environmental Impact Report (EIR) (State CEQA Guidelines Section 15064(a)(1)). The purpose of an EIR is to inform public agency decision-makers and the general public of the potentially significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project (State CEQA Guidelines Section 15121(a)). This PEIR provides the foundational CEQA compliance documentation upon which the County's, responsible agencies', and all other applicable agencies' future considerations of proposed projects and their related desirous permits, approvals, and other grants of authority (collectively, "approvals") shall be based.

This PEIR complies with all criteria, standards and procedures of CEQA, and the State CEQA Guidelines (California Administrative Code 15000 et seq.). This document has been prepared as a program-level EIR pursuant to Section 15168 of the State CEQA Guidelines to document the environmental impacts of solar energy development within the County. The contents of this PEIR represent the independent judgment of the County (State CEQA Guidelines Section 15050). Subsequent, proposed solar energy projects over 20 megawatts (MW) would be examined in the light of this PEIR to determine whether any additional environmental document must be prepared. (State CEQA Guidelines Section 15168(c)). Solar energy projects 20 MW or less may be exempt from further CEQA analysis, unless an event specified in PRC Section 21166 occurs, in which case a Supplemental EIR or other CEQA document may be required. These determinations will be made for potential projects pursuant to Inyo County Code (ICC) Title 21 and the State CEQA Guidelines.

Subsequently proposed individual solar energy projects 20 MW and greater, which are located within the SEDAs described in this PEIR and which are consistent with the REGPA, will undergo project specific analysis and will be examined in light of this PEIR to determine whether any additional environmental document must be prepared (State CEQA Guidelines Section 15168(c)) and, if so, the scope of the environmental document. Feasible mitigation measures and alternatives developed in this PEIR shall be incorporated into subsequent actions under the REGPA. Any future solar energy development that is proposed to be sited outside of the SEDAs (community scale, and/or distributed generation projects) has not been analyzed in this PEIR and would require separate environmental review under CEQA.

1.3 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

The public agency with the greatest responsibility for carrying out or approving the project or the first public agency to make a discretionary decision to proceed with a proposed project should ordinarily act as the "lead agency" pursuant to State CEQA Guidelines Section 15051(b)(1). The County of Inyo is the lead agency and is responsible for ensuring that this PEIR satisfies the procedural and substantive requirements of CEQA. The County is also responsible for considering and certifying the adequacy and completeness of the PEIR prior to making any decision regarding the proposed project.

In addition to the lead agency, other agencies are involved in the CEQA process. Section 15386 of the State CEQA Guidelines defines "trustee agency" as a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. In addition, under Section 15381 of the State CEQA Guidelines, "responsible agencies" are those agencies other than the lead agency having discretionary approval over one or more actions involved with development of the project.

While no trustee agencies or responsible agencies are responsible for approvals associated with adoption of the REGPA, implementation of proposed future solar energy projects under the

REGPA will require permits and approvals from lead, trustee, and responsible agencies, which may include the following:

- California Department of Conservation
- California Department of Fish and Wildlife
- City of Los Angeles Department of Water and Power
- County of Inyo
- Native American Heritage Commission
- Regional Water Quality Control Board
- State Water Resources Control Board
- US Army Corps of Engineers
- US Department of the Interior Bureau of Land Management
- US Fish and Wildlife Service

1.4 ENVIRONMENTAL REVIEW PROCESS

The preparation, review, and certification process for the PEIR involves the following steps:

Notice of Preparation

In accordance with Section 15082 of the State CEQA Guidelines, the County posted a Notice of Preparation (NOP) of a PEIR for the project on June 11, 2014. The NOP identified the County as the lead agency, and the notice was distributed to the public, potentially interested local, state, and federal agencies including the responsible and trustee agencies, and the State Clearinghouse to solicit comments on the proposed project. A public comment period on the NOP ended on July 10, 2014.

Before the close of the public comment period, the County conducted two public scoping sessions for the proposed project, hosted at the locations identified below:

- June 16, 2014; 5:00 pm; Olancha Fire Station; 689 Shop Street; Olancha, CA
- June 18, 2014; 5:00 pm; Trona Golf Course; 82700 Trona Road; Trona, CA

In addition, prior to the close of the public comment period, the County conducted three public scoping meetings for the proposed project, hosted at locations identified below:

- June 24, 2014; 6:00 pm; Statham Hall; 138 N. Jackson Street; Lone Pine, CA
- June 25, 2014; 6:00 pm; Bishop City Hall Auditorium; 377 West Line Street; Bishop, CA
- June 26, 2014; 6:00 pm; Tecopa Community Center; 405 Tecopa Hot Springs Road; Tecopa, CA

Altogether, these meetings were attended by 62 agency representatives and community members. At each meeting, County staff provided an overview of the proposed project and potential environmental impacts, as identified in the NOP. Participants were then provided an opportunity to ask questions to clarify their understanding of the project description, and to provide comments regarding potential environmental impacts, content of the REGPA, and the current and subsequent CEQA processes associated with the REGPA. Comments received during the NOP were considered by the County and incorporated into the PEIR as appropriate.

A copy of the NOP, list of NOP recipients, and the comments received from interested parties are included in Appendix A.

Draft Program Environmental Impact Report

This document is the Draft PEIR. It was prepared with assistance from a consulting firm pursuant to a contract with the County, as the lead agency, consistent with Section 15084 of the State CEQA Guidelines. The Draft PEIR contains a description of the project and its environmental setting, potential impacts as a result of the project, prescribed measures to reduce or mitigate for impacts found to be significant, and an analysis of reasonable alternatives to the project. Following the release of the Draft PEIR for public review and comment, the County will file the Notice of Completion (NOC) with the Governor's Office of Planning and Research and the 45-day public review and comment period of the PEIR will begin.

Public Notice/Public Review

The principal objectives of CEQA are that: (1) the environmental review process provides for public participation; and (2) the environmental document serves as an informational document to inform members of the general public and the County as the decision-maker of the physical impacts associated with a proposed project. Concurrent with the NOC, the County will provide public notice that the Draft PEIR is available for public review and will solicit comments on the PEIR from the public, agencies, organizations, and other interested parties. The Draft PEIR will be available for review and comment by the public and interested jurisdictions, agencies and organizations for a period of 45 days. Written comments on this Draft PEIR may be submitted to Ms. Cathreen Richards, Senior Planner, by:

Mail: Inyo County Planning Department
Attention: Ms. Cathreen Richards, Senior Planner
P.O. Drawer L
Independence, CA 93526
Phone: (760) 878-0263
Email: crichards@inyocounty.us

Final Program Environmental Impact Report and Public Hearing Process

Following the public review period, comments received on the Draft PEIR will be considered and a Final PEIR will be prepared which will address the written comments received on the Draft PEIR during the public review period. The Inyo County Planning Commission and Board of Supervisors will review and consider the Final PEIR before making their decisions to approve, revise, and/or deny the proposed REGPA. Decisions on the Final PEIR and the REGPA by the Planning Commission and the Board of Supervisors will be made following public hearings, during which additional public input will be heard.

Prior to approving the REGPA, the County, as the lead agency, will prepare written findings of fact for each significant environmental impact identified in the PEIR. For each significant impact, the lead agency must: (1) determine if the proposed project has been changed to avoid or substantially lessen the magnitude of the impact; (2) find that changes to the proposed project are within another agency's jurisdiction, and such changes have been or should be adopted; and

(3) find that specific economic, social, or other considerations make mitigation measures or proposed project alternatives infeasible. The findings of fact must be based on substantial evidence in the Final PEIR, the administrative record, and the conclusions required by CEQA.

If the County elects to proceed with the proposed project and the REGPA would result in significant impacts, a "statement of overriding considerations" must be prepared. A statement of overriding considerations explains why the lead agency determines that the benefits of the project outweigh the unavoidable environmental impact of the project.

Mitigation Monitoring and Reporting Program

CEQA requires that when a public agency makes findings based on an EIR, the public agency must adopt a reporting or monitoring plan for those measures which it has adopted, or made a condition of the project approval in order to mitigate or avoid significant effects on the environment (Sections 21081.6 and 21081.7 of the State CEQA Guidelines). The reporting or monitoring plan must be designed to ensure compliance during project implementation. The required Mitigation Monitoring and Reporting Program for the REGPA is included as Appendix B.

1.5 SCOPE AND ORGANIZATION OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT

According to Section 15168(a) of the State CEQA Guidelines, a PEIR may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts of the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

The scope of an EIR is determined in terms of what is reasonably feasible, in light of the magnitude of the project being evaluated, the severity of its likely environmental impacts, and the geographic scope of the project (CEQA Guidelines Sections 15151, 15204(a)). This PEIR provides quantitative and qualitative evaluations to the level feasible, without undue speculation, as to the potential environmental impacts as a result of implementing the REGPA. This document contains a framework of mitigation measures for subsequent, site-specific environmental review documents as individual solar energy projects are designed, proposed, undergo additional environmental analysis and CEQA review, and proceed through the decision-making process.

Sections 15120 through 15132 of the State CEQA Guidelines present the required content for Draft and Final EIRs. A Draft EIR must include a brief summary of the proposed actions and its consequences, a description of the proposed project, a description of the environmental setting, an environmental impact analysis, mitigation measures proposed to minimize the significant effects, alternatives to the proposed project, significant irreversible environmental changes, limitations on the discussion of the impact, effects found not to be significant, organizations and persons consulted, and cumulative impacts.

In accordance with CEQA requirements, this Draft PEIR: (1) identifies the potential significant effects of the proposed project on the environment and indicates the manner in which those significant effects can be mitigated or avoided; (2) identifies any unavoidable adverse impacts that cannot be mitigated; and (3) analyzes reasonable alternatives to the project. Although this PEIR does not control the final decision by the County on the project, the County, as lead agency, must consider the information in this PEIR and respond to each significant effect identified in this PEIR.

The scope of this PEIR is based, in part, on the NOP prepared for the proposed project, public comments received in response to the NOP, and comments submitted at the public scoping meeting. This Draft PEIR is organized in the following sections:

Executive Summary

Consistent with Section 15123 of the State CEQA Guidelines, this section provides a brief summary of the proposed project, and identifies environmental impacts and mitigation measures through a summary matrix.

Section 1.0 – Introduction

This section provides an overview that describes the intended use of the PEIR (State CEQA Guidelines Section 15124(d)), as well as the environmental review process.

Section 2.0 –Project Location and Setting

This section includes a description of the physical environmental conditions in the vicinity of the project as they existed at the time the NOP was published, consistent with Section 15125 of the State CEQA Guidelines.

Section 3.0 – Project Description

This section provides a detailed description of the proposed project and project objectives, as well as background information and the project location, consistent with Section 15124 of the State CEQA Guidelines.

Section 4.0 – Environmental Impacts and Mitigation Measures

This section contains a comprehensive analysis of impacts to each environmental factor evaluated in this PEIR, and the appropriate, feasible measures to minimize or mitigate those impacts, consistent with Section 15126 of the State CEQA Guidelines.

Section 5.0 – Other CEQA Considerations

This section evaluates cumulative impacts resulting from the combination of the proposed project together with other projects causing related impacts, consistent with Section 15130 of the State CEQA Guidelines.

Consistent with Section 15126.2 of the State CEQA Guidelines, this section includes discussions of significant irreversible environmental changes that would be involved in the proposed action if implemented, as well as unavoidable significant environmental effects, including those that can be mitigated, but not reduced to a level of less than significant. It also includes a discussion of the ways the proposed project could foster economic or population growth, or the construction of additional housing in the surrounding environment.

Section 6.0 – Project Alternatives

Consistent with Section 15126.6 of the State CEQA Guidelines, this section evaluates a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. A total of five alternatives to the proposed project are evaluated in this section of the PEIR:

1. No Project Alternative
2. Solar Photovoltaic (PV) Only Alternative (no solar thermal)
3. Distributed Generation Only Alternative (less than 20 MW)
4. Reduced SEDA Alternative (elimination of the Laws, Rose Valley, Pearsonville, and Chicago Valley SEDAs, and an increase in the megawatts allowed in the Charleston View SEDA)
5. Solar Energy Development on Previously Disturbed Lands Only Alternative

Section 7.0 – References

This section lists the resources and references cited throughout the document, including individuals and agencies contacted in preparation of this document.

Section 8.0 – Report Preparers

This section lists the individuals and agencies that assisted in the preparation of the PEIR by name, title, and company or agency affiliation.

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2.0 PROJECT LOCATION AND SETTING

2.1 PROJECT LOCATION

The County is located on the east side of the Sierra Nevada, in the east central part of California. It is bordered by Mono County to the north, Fresno and Tulare Counties to the west, and Kern and San Bernardino Counties to the south. The eastern boundary of the County is the California state line with Nevada.

The County has identified SEDAs and the OVSA which comprise the project area of this PEIR. The SEDAs are divided into solar energy groups based on their location in the County and the associated transmission and distribution facilities. The location of each SEDA and the OVSA is presented below by solar energy group. Refer to Figure 2-1 for the County's location in the state and the SEDA locations in the County.

2.1.1 SEDAs Comprising the Western Solar Energy Group

The Western Solar Energy Group is comprised of SEDAs in Laws, Owens Lake, Rose Valley, and Pearsonville; it also includes the OVSA. The Laws SEDA is located in the north-central area of the County, approximately three miles northeast of the City of Bishop. Its northern boundary is the northern County boundary with Mono County. US Highway (US) 6 transects north/south through the SEDA.

The Owens Lake SEDA is located in the west-central portion of the County, between the Census Designated Places (CDPs) of Lone Pine and Olancha. Its boundaries are generally bordered by US 395 to the west and State Route (SR) 136 to the east. SR 190 follows the southern boundary, just inside the SEDA boundary line.

The Rose Valley SEDA is located south of Olancha. From Olancha, the SEDA follows US 395 southward for approximately 19 miles. The Pearsonville SEDA is located at the CDP of Pearsonville. Its southern boundary is the southern County boundary with Kern County. From the County line, the SEDA follows US 395 northward for approximately 5.5 miles.

The OVSA contains the Owens River Valley in the County. It is east of the Sierra Nevada, west of the White Mountains and Inyo Mountains, and north of Olancha. Its northern boundary is the northern County boundary with Mono County. From the County line, the OVSA follows US 395 southward for approximately 66 miles.

2.1.2 SEDA Comprising the Southern Solar Energy Group

The Southern Solar Energy Group is comprised solely of the Trona SEDA, which is located in the south central area of the County, along the boundary with San Bernardino County. SR 178 travels through the SEDA. From the County boundary, this SEDA follows the road northward for approximately 3.2 miles.

2.1.3 SEDAs Comprising the Eastern Solar Energy Group

The Chicago Valley, Charleston View, and Sandy Valley SEDAs are located in the southeastern area of the County and comprise the Eastern Solar Energy Group. The Chicago Valley SEDA is located east of SR 178, approximately 5.5 miles east of its junction with SR 127.

The Charleston View SEDA is located adjacent to the eastern County boundary/state line with Nevada. It is located approximately 8.4 miles southeast of SR 178 at the County boundary/state line. The Sandy Valley SEDA is located at the southeast corner of the County, approximately 31.7 miles southeast of SR 178 at the County boundary/state line with Nevada.

2.2 REGIONAL SETTING

2.2.1 Inyo County Setting Overview

Inyo County is approximately 10,200 square miles and is largely undeveloped. It has only one incorporated city, the City of Bishop, which is located in the north central area of the County. The County is located within the Great Basin region of the United States (US) which is noted for its arid climate and Basin and Range topography. This area is characterized by broad valleys traversed by streams, rivers, and washes, giving rise to mountain ranges of low hills and jagged peaks. The County's western boundary follows the east side of the Sierra Nevada. Refer to Figure 2-2 for an overview of the regional setting.

Mount Whitney, at 14,505 feet above mean sea level (amsl) and the highest peak in the continental US, is in the Sierra Nevada on the County's western border with Tulare County. Badwater Basin in Death Valley (282 feet below mean sea level), the lowest place in North America, is in eastern Inyo County. Multiple mountain ranges, including the White Mountains, Inyo Mountains, and the Panamint Range, trend north south through the County. Located to the east of the Sierra Nevada and west of the White and Inyo Mountains lies the arid Owens Valley, and within it flows the Owens River. The valley is one of the deepest in the US and provides water to the City of Los Angeles which is exported via the Los Angeles Aqueduct. The vegetation and climate are closely tied to elevation, although the hot, dry summers, and cool, wet winters generally support vegetation adapted to arid and semi-arid conditions.

US 395 is the major regional roadway through the County. It trends generally north to south, following the Owens Valley. Other prominent roadways in the County are California State Routes including SR 127, 136, 168, 178, and 190.

The majority of the County is publicly owned; 92 percent is federally-managed; 2.4 percent is managed by the state; 3.9 percent is owned by the City of Los Angeles Department of Water and Power (LADWP); and the remaining 1.7 percent is privately or County-owned. Sixty percent of the land in the County is federally designated as wilderness – much of which is in Death Valley National Park – which means that those lands are not open to exploration or development of resources. Approximately 12 percent of the land in the County is US National Forest, managed by the US Forest Service (USFS), and the remainder of the federal land in the County is managed by either the US Department of Defense (DOD) and/or the US Bureau of Land Management (BLM) for multiple uses. The land owned by the LADWP is managed to benefit the citizens of the City of Los Angeles and its water supply (including the previously mentioned

Los Angeles Aqueduct). The China Lake Naval Air Weapons Station (NAWS) is located in southwestern Inyo County where it crosses the County border into Kern and San Bernardino Counties. Death Valley National Park encompasses most of the eastern and central areas of the County, comprising approximately half of the County.

As a result of public land ownership, the County is largely rural in character and characterized by vast expanses of unspoiled vistas and arid resources. Most of the County's population lives in Bishop or in the immediately surrounding areas. The rest of the County's population lives in small towns and CDPs, the majority of which are concentrated along the US 395 corridor in the Owens Valley. Inyo County has a lengthy history of mining and agricultural activities (primarily cattle ranching).

2.2.1.1 Owens Valley

The Owens Valley is a north-south trending valley in both Mono and Inyo Counties bounded by faults and the uplifted blocks of the Sierra Nevada to the west and the White and Inyo Mountains to the east. The floor of the valley is at approximately 4,500 feet amsl, and varies in width from 6 to 15 miles. The valley is characterized by interior drainages with lakes and playas. The Owens River, located in both Mono and Inyo Counties, follows the length of the valley. Streams originating in the Sierra Nevada drain east to the Owens River. Waterways originating in the White and Inyo Mountains are often ephemeral due to lack of precipitation from the rain shadow cast over the valley by the Sierra Nevada. Owens Lake is approximately 110 square miles and sits on the southern end of the valley, at the historic terminus of the Owens River.

The predominant land uses in the Owens Valley are ranching and recreation, with little development outside of the established communities. A large portion of the valley floor is used as rangeland for cattle and livestock. A majority of the land on the Owens Valley floor is undeveloped and is owned by LADWP. The BLM and the USFS also manage portions of land within the valley. LADWP owns and operates the Los Angeles Aqueduct through the valley, which diverts water from the Owens River. As a result of this practice and natural climatic conditions, Owens Lake has subsequently dried, leaving the present alkali flat which impacts the southern valley with alkali dust storms and has become a major source of airborne dust in the valley. Owens Lake is owned and managed by various public and private entities, although California State Lands Commission (SLC) is the primary landholder.

The Lower Owens River Project (LORP) was initiated in 2006, in which the County and LADWP are responsible for rewatering a 62-mile-long stretch of the river and adjacent floodplain that had been previously dewatered by the Los Angeles Aqueduct. In 2008, the Great Basin Unified Air Pollution Control District (GBUAPCD) and LADWP agreed on a plan for dust mitigation measures on the lake to minimize fugitive dust from the dry lake bed. Pursuant to that agreement, LADWP implemented shallow flooding and vegetation management on over 45 square miles of the lake. Gravel cover was applied to a lesser extent. Phase 7a of the dust mitigation efforts on the lake began in early 2014, in which 3 square miles not already treated for dust control will receive new dust control measures, and an additional 3 square miles of lake bed that currently has some form of dust control in place will be redone using "hybrid" combinations of shallow flooding, managed vegetation, contoured gravel cover and tillage (GBUAPCD 2013).

2.2.2 Potential Solar Energy Resources

Based on work done for the US Department of Energy (DOE) by the National Renewable Energy Laboratory (NREL), in which the potential solar energy generation resources across the US were mapped (expressed in kilowatt hours-per square meter-per day). Inyo County, like the rest of the southwestern US, has excellent solar energy generation potential. The map was produced with a satellite radiation model developed by the State University of New York/Albany along with NREL, and other universities working for the DOE. The model used to create the map takes hourly radiance images from geostationary weather satellites, daily snow cover data, and monthly averages of atmospheric water vapor, trace gases, and the amount of aerosols in the atmosphere, to calculate the hourly total insolation (sun and sky) falling on a horizontal surface (for more information about the map, please see: http://www.nrel.gov/gis/solar.html). The potential solar energy generation is expressed in expressed in kilowatt hours-per square meter-per day (kWh/m^2/day), with the least potential shown as 4.5 kWh/m^2/day or less and the greatest potential shown as 7.5 kWh/m^2/day or more. Most of Inyo County depicts areas with potential solar energy generation of 7.5 kWh/m^2/day or more which is some of the greatest energy generation potential in the country (Inyo County 2013). Refer to Figure 2-3 for the potential solar energy generation in the County.

2.2.3 Electric System Infrastructure

The existing electric system network in the County is split between two electric utility providers: Southern California Edison (SCE) and LADWP. The California Independent System Operator (CAISO)[1] controls power flows on the transmission lines owned by SCE. LADWP is a separate balancing authority in control of its own transmission lines. These systems generally run to the load centers of southern California. Although some Nevada electric transmission lines allow delivery to the County from Nevada, no electric transmission facilities cross the Sierra Nevada into the County from central California. Refer to Figure 2-2 for an overview of the existing electric system infrastructure.

2.2.3.1 Southern California Edison

In Inyo County, SCE has a main 115-kilovolt (kV) electric line along the US 395 corridor that provides access to geothermal and hydroelectricity energy sources in Inyo and Mono Counties while serving SCE's portion of the local load. The SCE system in the County is only weakly connected to Nevada – it includes an intertie to Esmeralda County, Nevada through the Silverpeak (55 kV) transmission line. It is also connected to the LADWP system through a single 3-mile-long 115-kV line that is tied to a phase shifting transformer bank (SCE 2008).

[1] CAISO is a nonprofit public benefit corporation that manages the flow of electricity across the high-voltage, long-distance power lines that make up 80 percent of California's (and a small portion of Nevada's) power grid.

Due to the weak system connections, a special protection system (also called a Remedial Action Scheme)[2] is in place to mitigate reliability issues in the area under specific outage conditions.

2.2.3.2 Los Angeles Department of Water and Power

LADWP owns and operates the 230-kV Inyo-Rinaldi Transmission System that extends from the Owens River Gorge substation to the Rinaldi Receiving Station in San Fernando Valley. In Inyo County, the transmission line is located on the east side of the Owens Valley, and the distribution network supplies power in the Owens Valley at a service voltage below 55 kV (typically 33 kV or 12 kV in the County). The LADWP system also includes a separate 500-kV direct current system from Oregon to Los Angeles that passes through Inyo County without a local connection (LADWP 2013a).

The Inyo-Rinaldi System is a 230-kV line with a rated capacity of about 450 MW (although a substantial upgrade to the line's capacity is scheduled to occur in the segment between the Barren Ridge Switching Station, in Kern County and the Rinaldi Switching Station). LADWP holds entitlement to the entire 450-MW capacity of the existing line that has approximately 240 MW of excess carrying capacity. The LADWP proposed Southern Owens Valley Solar Ranch project has a priority position for future interconnection to this existing line (LADWP 2013a). According to LADWP, the interconnection of the proposed 200-MW Solar Ranch project would require relatively minor work at the project site, but no upgrades to the transmission line itself.

2.2.3.3 Valley Electric Association

Valley Electric Association, Inc. (VEA) is a nonprofit electric utility based in Pahrump, Nevada. VEA's service area includes more than 6,800 square miles of land in Nevada, mostly along the California-Nevada border. Future solar energy projects located in California near the state line and in the southeastern portion of the County could interconnect with the VEA transmission system in Nevada.

The Hidden Hills Solar Electric Generating System is a 500-MW solar thermal system project proposed by Bright Source, LLC to be developed in eastern Inyo County. Consideration of the project by the California Energy Commission (CEC) is currently in suspension, but if constructed, would be located in the Charleston View SEDA near the Nevada state line. This project was analyzed for connection with the VEA system, which would require analysis by the VEA and approval by the CAISO. The studies performed for the Hidden Hills Solar Electric Generating System project concluded that the VEA system could interconnect the 500-MW project to its existing Pahrump Bob Tap 230-kV line (Energy Commission 2013). This would

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[2] A Remedial Action Scheme uses a set of fast and automatic control actions, protection relays, and a telecommunications network to ensure the most reliable and safest power system performance following critical outages on a transmission network. They are used to mitigate problems following the loss of one or more transmission lines in a transmission corridor. The primary function is to monitor load flows on critical transmission lines, detect outages, take pre-planned actions to reduce the problems, and to signal system operators. (Wang and Rodriguez, no date).

require a new substation and either reconductoring the existing 230-kV line or installing a new 230-kV line between the new substation and the existing SCE Eldorado substation near Boulder City, Nevada (Energy Commission 2013).

2.2.3.4 Local Lines

Local lines can be found throughout Inyo County. Although these lines are far from each other and serve specific, isolated, areas, they have the potential to be upgraded or to have new higher capacity transmission located in their right-of-ways that could ultimately serve future renewable energy generation facilities. These lines run from main lines, including but not limited to: Deep Springs, Panamint, Darwin, Death Valley Junction and Tecopa.

2.2.3.5 Electric Distribution System

The distribution system is a part of the statewide bulk transmission system. As noted above, both LADWP and SCE own and manage portions of the distribution system in the County. Because of the limited size of the load in the County, the distribution system and substations are small. It is generally possible for circuits on the existing distribution system to physically accommodate power plants up to about 20 MW. This energy load is constrained by the amount of energy needed by customers in the County and the capability of the generation to be properly designed for safe interconnection.

LADWP has a Feed-In Tariff program that studied the capacity of their system in the Owens Valley to interconnect distributed generation projects (generation facilities that produce 20 MW or less for off-site use or sale). LADWP concluded that projects with up to 4 MW of distributed generation could interconnect with its distribution system in Owens Valley.

Similarly, SCE has performed studies of the SCE system pertinent to distributed generation developers who are interested in interconnecting with SCE's distribution system. SCE would typically consider projects of less than 10 MW to be viable for interconnection to SCE's distribution system. SCE identifies "preferred" and "not preferred" areas of its distribution system for distributed generation facility interconnection. Preferred areas are high load density areas that currently have low distributed generation penetration levels which would minimize the cost of interconnection to the SCE system (SCE 2013b). Not preferred areas are areas with a low load density and/or high distributed generation penetration. They are identified as not preferred because the cost of interconnection would likely be higher and could take longer. In Inyo County, most of SCE's distribution system is classified as not preferred because the system does not have available distributed load capacity; however, a substation near Bishop has an estimated 19 MW of available capacity (SCE 2013b).

2.3 PROJECT SITE CHARACTERISTICS

The overall project site is comprised of eight SEDAs and the OVSA which are generally located in relatively flat valley bottoms of a semi-arid environment. These areas are largely undeveloped and support varied habitats and vegetation communities, including desert scrub, chaparral, riparian, and alkali grasslands. The habitats and communities vary depending on the existing level of disturbance, the soils and substrates, elevation, and topography. The overall project area encompasses public lands, state lands, County and privately owned lands in unincorporated Inyo County. The OVSA and SEDAs are described individually below.

2.3.1 Western Solar Energy Group

SEDAs in the Western Solar Energy Group are situated along the existing LADWP transmission lines located along the east side of the Owens Valley.

2.3.1.1 Laws SEDA

The Laws SEDA encompasses 18.2 square miles northeast of Bishop. The SEDA is located in the Owens Valley west of the White Mountains and east of Spring Canyon Creek and the Owens River. The SEDA is a relatively flat, largely undeveloped valley bottom characterized by desert scrub and some agricultural land uses giving way to the White Mountains to the east and low hills to the west. A network of small waterways transects the SEDA. Elevations range from over 5,100 feet amsl in the northeast portion of the site, to approximately 4,500 feet amsl in the southern portion of the site. US 6 trends north-south and an SCE 55-kV electrical line trends east-west through the SEDA. Residential and industrial properties associated with the unincorporated community of Laws are located east of US 6, at Silver Canyon Road. Refer to Figure 2-4a for the characteristics of the Laws SEDA.

2.3.1.2 Owens Lake SEDA

The Owens Lake SEDA encompasses 139.44 square miles, including the approximately 110-square-mile dry Owens Lake lakebed. This SEDA encompasses the southern portion of the Owens Valley at the terminus of the Owens River. Mount Whitney, in the Sierra Nevada, is approximately 15 miles northwest of the SEDA; the Inyo Mountains rise to the east. Elevations range from over 4,100 feet amsl in the southeast area of the site to approximately 3,550 feet amsl in the lakebed near the center of the site. The CDP of Keeler encompasses 1.3 square miles located on the former northeast shore of Owens Lake, along SR 136, with a population of 66 people (2010 Census). As previously described, the lake is dry due to water diversion and climatic conditions, and is a major source of airborne dust in the County. As part of an air quality management settlement, LADWP has implemented dust control measures involving shallow flooding, contoured gravel, and vegetation management on over 45 square miles of the lake to help minimize dust storms. Existing SCE and LADWP electrical lines generally follow the perimeter of the SEDA. BLM lands in the southeastern portion of the SEDA are under a BLM grazing allotment. Refer to Figure 2-4b for the characteristics of the Owens Lake SEDA.

2.3.1.3 Rose Valley SEDA

The Rose Valley SEDA encompasses 37.81 square miles along a narrow valley between the southern Sierra Nevada to the west and the Coso Range to the east. Elevations range from approximately 4,500 feet amsl in the Sierra Nevada foothills along the western boundary, to approximately 3,400 feet amsl at the southern end of the site. US 395 generally trend north-south through the SEDA. The Los Angeles Aqueduct flows as an open channel through the northern half of the SEDA, from the northwest towards the southeast, to connect with the North Haiwee Reservoir located outside of the eastern SEDA boundary. The aqueduct reenters the SEDA from the southern end of the reservoir, and approximately 2 miles from the reservoir, the open channel is directed to below ground pipes. LADWP electrical lines also trend north-south through the SEDA. This SEDA is largely undeveloped, with some traveler amenities (e.g., rest stop, gas station, etc.) near the Sykes/Gill Station Coso Road junction with US 395, and isolated residential developments and industrial buildings located along the highway corridor. Agricultural lands are located in the northern portion of the SEDA, east of US 395. Undeveloped areas are characterized by desert scrub giving way to mountains to the east and the west. The SEDA is largely BLM lands under grazing allotment. Refer to Figure 2-4c for the characteristics of the Rose Valley SEDA.

2.3.1.4 Pearsonville SEDA

The Pearsonville SEDA encompasses 6.9 square miles along US 395, between the southern Sierra Nevada to the west and the White Hills to the east. Elevations range from approximately 2,900 feet amsl at the westernmost part of the SEDA to 2,400 feet amsl at the southeast corner. US 395 trends north-south through the SEDA. The China Lake NAWS is located directly east of the SEDA. LADWP electrical lines are located west of the SEDA, and SCE electrical lines are located to the east. The LADWP electrical lines enter the SEDA at its westernmost point. The CDP of Pearsonville is located along US 395, near the County boundary. It encompasses approximately 4 square miles, with a population of 17 (2010 Census). The SEDA is largely undeveloped, with residential properties associated with Pearsonville in the southern portion of the SEDA. Undeveloped portions are characterized by desert scrub. Approximately half of the SEDA is BLM managed lands under grazing allotment. Refer to Figure 2-4d for the characteristics of the Pearsonville SEDA.

2.3.1.5 Owens Valley Study Area

The OVSA encompasses the extent of the Owens Valley within Inyo County, excluding the Laws and Owens Lake SEDAs. This OVSA is described in detail in Section 2.2.1.1. The valley is largely undeveloped with ranching and recreation the predominant land uses and a large portion of the valley floor used as pasture or rangeland for livestock. Refer to Figure 2-4e for the characteristics of the OVSA.

2.3.2 Southern Solar Energy Group

2.3.2.1 Trona SEDA

The Trona SEDA encompasses 7.1 square miles in the Searles Valley between the Argus Range to the west and the Slate Range to the east. Elevations range from approximately 2,100 feet amsl in the foothills of the Argus Range at the southwest corner of the site to 1,650 feet amsl in the southeast corner of the site. The SEDA is relatively flat with slopes trending towards the east. The SEDA is largely undeveloped, characterized by desert scrub flats with ephemeral washes and BLM managed lands. The Trona Airport is a one runway airport located in the southeast portion of the SEDA. Private properties within the SEDA are developed with large-lot residential and commercial land uses. A 33-kV SCE electrical line follows Trona Wildrose Road as it trends generally north-south through the SEDA. The community of Trona is located along SR 178 just south of the County border in San Bernardino County. Refer to Figure 2-4f for the characteristics of the Trona SEDA.

2.3.3 Eastern Solar Energy Group

SEDAs in the Eastern Solar Energy Group are situated for potential tie-in to the VEA system in Nevada.

2.3.3.1 Chicago Valley SEDA

The Chicago Valley SEDA encompasses 2.4 square miles in the Chicago Valley between the Resting Spring Range to the west and the Nopah Range to the east. Elevations range from approximately 2,140 feet amsl at the base of the Resting Spring Range in the southwest corner of the site to 2,075 feet amsl in the southeast corner of the site. The topography slopes towards a wash located in the western portion of the site, trending from the northwest to the southeast through the site. Ephemeral washes from the east and west flow towards the wash through the SEDA. The SEDA is largely undeveloped and characterized by desert scrub flats and gentle slopes. Chicago Valley Road travels northwest-southeast through the southwest portion of the SEDA. The unincorporated community of Chicago Valley is a small development of residential properties is located east of Chicago Valley Road, near the center of the SEDA. Shoshone is the nearest CDP with a population of 31 (2010 Census), located approximately 4.75 miles southwest of the Chicago Valley SEDA, on the opposite side of the Resting Spring Range. Refer to Figure 2-4g for the characteristics of the Chicago Valley SEDA.

2.3.3.2 Charleston View SEDA

The Charleston View SEDA encompasses 62 square miles in the Pahrump Valley, east of the Nopah Range in the Nopah Range Wilderness. Topography in this SEDA ranges from a basin-like depression near the County boundary, to jagged hills in the western portion of the SEDA. Elevations range from approximately 2,510 feet amsl near the northern portion of the site to 3,300 feet amsl at the peaks in the western portion of the site. The basin and low hills are characterized by desert scrub vegetation. The City of Pahrump, Nevada is the nearest city to the SEDA. It is approximately 18 miles north of the Charleston View SEDA in the Pahrump Valley.

The majority of the SEDA is BLM managed lands, with a substantial portion of that in grazing allotment. A portion of this SEDA was previously planned for development under the Hidden Hills Solar Electric Generating System Project. The unincorporated community of Charleston View is located along Tecopa Road. The area has been developed with a network of roads sparsely developed with residential and commercial land uses. Refer to Figure 2-4h for the characteristics of the Charleston View SEDA.

2.3.3.3 Sandy Valley SEDA

The Sandy Valley SEDA encompasses 4.8 square miles in the Mesquite Valley, east of the Kingston Range in the Pahrump Valley Wilderness. The town of Sandy Valley in Nevada is adjacent to this SEDA. The site is relatively flat with elevations ranging from 2,610 to 2,675 feet amsl. Approximately half of the SEDA is BLM managed lands. Some rural residential development and agricultural land uses occur sparsely throughout.

2.4 RENEWABLE ENERGY DEVELOPMENT POLICIES, PLANNING AND PROGRAMS

California and Inyo County have numerous policies designed to support renewable energy development. Regional planning efforts and programs guide renewable energy development in the region. The following sections provide a brief overview of these policies. Refer to Figure 2-4i for the characteristics of the Sandy Valley SEDA.

2.4.1 State Renewable Energy Policies

In California, a number of existing and proposed policies drive renewable energy development, the primary of which is California's Renewable Portfolio Standard (RPS).

2.4.1.1 Renewable Portfolio Standard

California's RPS was established in 2002, accelerated in 2006, and expanded in 2011; it is the most aggressive RPS in the country. It requires investor-owned utilities, publicly owned utilities, and other electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent by 2020. The RPS is the primary driver for new utility scale renewable energy development in California (California Public Utilities Commission [CPUC] 2013).

As of the end of 2012, the investor-owned utilities reported that they served 19.6 percent of their electricity with RPS-eligible generation in 2012 (CPUC 2013). RPS procurement requires the utilities to achieve a target of 20 percent from 2011 to 2013. According to the CPUC, California is on track to meet its interim requirement of 25 percent renewable by 2016 and well-positioned to meet 33 percent by 2020 (CPUC 2013). With California's utilities on track to meet the RPS, the development of new renewable energy could slow. In October 2013, California's Senate and State Assembly passed Assembly Bill (AB) 327. This bill removes the RPS upper limit, thereby providing the potential to increase renewable generation to more than 33 percent. While the RPS has not yet been raised, AB 327 indicates the governor's willingness to exceed the current RPS which may continue to drive developer interest.

In addition to the California RPS goals, other programs encourage development of customer-side renewable energy. The California Solar Initiative[3] and Self-Generation Incentive Program[4] encourage customers to install renewable energy technologies to directly serve their electricity needs (or loads). This electricity may contribute to meeting California's RPS goals if a project meets the eligibility requirements established for the RPS. On-site projects also indirectly contribute to meeting the RPS by reducing the overall electricity demand in California.

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[3] The California Solar Initiative is a solar rebate program that offers cash back to customers of investor-owned utilities – PG&E, SCE, and San Diego Gas and Electric. This program funds solar panels on existing homes, and on existing or new commercial, agricultural, governmental, and non-profit buildings. The program has a goal to install approximately 2,000 MW of solar projects by 2016.

[4] The CPUC's Self-Generation Incentive Program provides incentives to support existing, new, and emerging distributed energy systems. The program provides rebates for qualifying distributed energy systems installed on the customer's side of the utility meter.

2.4.1.2 Assembly Bill 32: Global Warming Solutions Act

In 2006, the Legislature passed the Global Warming Solutions Act which set into law the recommendation for reducing California's greenhouse gas emissions to 1990 levels by 2020. It directed the California Air Resources Board (CARB) to begin developing actions to reduce greenhouse gases while preparing a Scoping Plan to identify how best to reach the 2020 limit. A key element of the Scoping Plan was to achieve a statewide renewables energy mix of 33 percent.

2.4.1.3 Distributed Generation Policies

In California, renewable energy projects are considered either distributed (i.e., 20 MW or less) or utility scale (over 20 MW). Distributed generation is also defined as localized energy generation interconnected on site or close to load. Distributed generation is generally constructed quickly with no new transmission infrastructure required and minimal environmental impacts. In the Clean Energy Jobs Plan*,* Governor Brown established a goal of 12,000 MW of localized energy development in California (Brown 2008). The plan identified solar systems of up to 2 MW that would be installed on roofs and other projects up to 20 MW in size that would be located on public and private property throughout the state.

2.4.1.4 Assembly Bill 327 (Electricity: natural gas: rates: net energy metering: California Renewables Portfolio Standard Program)

The cost of electricity has a major influence over distributed generation and other small scale renewable installations. One recent policy change, AB 327, is specifically relevant to electricity rates and is expected to directly influence and create opportunities for future solar development because it removes the net metering cap for investor-owned utilities and removes the RPS cap as noted above.

Under previously existing law, the CPUC had regulatory authority over public utilities, including electrical corporations. AB 327 is comprehensive rate reform legislation that provides the CPUC with the authority to address current electricity rate inequities, protect low-income energy users, and maintain robust incentives for renewable energy investments. It also requires the electric utilities to develop distribution infrastructure plans to ensure that ratepayer dollars are being used in the most efficient way possible.

AB 327 authorizes the CPUC to rewrite rules for solar power users selling excess power back to the grid and to require utilities to generate even more electricity from wind, solar, and other renewable sources. AB 327 also sets pricing tiers for electrical customers. People living in temperate climates will probably see higher bills. Meanwhile, those in warmer regions of the state, such as Inyo County, would likely realize a rate decrease. Exactly how much rates would change would be left to the CPUC after it conducts a detailed technical investigation.

2.4.2 Inyo County Solar Energy Policies

The County has a long history of planning for renewable energy. Beginning in the early 20th century, hydroelectric power plants were built for the purpose of constructing the LADWP

Los Angeles aqueduct. County policies pertinent to solar energy development are described below.

2.4.2.1 Inyo County Code Title 21: Renewable Energy Ordinance

ICC Title 21 states that noncommercial, small scale, PV systems for solar energy production are allowed in all County zoning districts and require building, electrical permits and CEQA review. To encourage these small scale, private, PV systems the County has created an expedited permitting process. In the case of noncommercial wind energy generation, the County has included in its zoning code: Chapter 18.79 Regulation of Small Wind Energy Systems. ICC 18.79 includes development standards applied to small wind energy systems and a requirement that a Conditional Use Permit (CUP), which requires Planning Commission approval with a public hearing as well as CEQA review, are necessary for all applications to build them. The stricter requirements applying to noncommercial wind energy systems are primarily derived from aesthetic, noise, and safety concerns.

ICC Title 21 provides standards for commercial scale wind and solar energy development. Under ICC Title 21, the construction of any commercial solar thermal, PV, or wind energy power plant, or an electric transmission line associated with these types of power plants, requires the developer to either obtain a renewable energy permit, a renewable energy impact determination, or to enter into a renewable energy development agreement with the County. Each option is subject to CEQA review. The decision by a developer whether to seek an agreement or a permit may be based on the size and type of facility that is being proposed. For smaller scale projects, a renewable energy permit may be the most appropriate. The permit must be approved by the County Planning Commission, which requires a public hearing. The specific development standards attached to a renewable energy permit are decided on a case by case basis and can address the same requirements found in the rest of the County's zoning code such as noise, light and glare, height, setbacks, and distance between structures.

Large scale commercial facilities that are required to obtain approval from the CEC or the CPUC prior to construction are exempt from the County's requirement to obtain a renewable energy permit. They are, however, required to obtain a renewable energy impact determination. The purpose of the renewable energy impact determination is to ensure that the development standards and/or mitigation measures that would otherwise be addressed in a renewable energy permit are to the extent possible, incorporated into any approval of the facility granted by a state or federal agency.

The last option, a renewable energy development agreement, is designed to encourage and support the development of renewable energy projects. If a developer obtains a permit, the project does not have to obtain a renewable energy permit or renewable energy impact determination. A renewable energy agreement is tailored to each project and developer through negotiations with the County. The process for entering into a renewable energy development agreement with the County is specified in ICC Title 20: Development Agreements. All renewable energy developments, per ICC Title 21, must also be consistent with the County's General Plan.

2.4.2.2 County Ordinance No. 1158 to Encourage and Regulate Development of Renewable Energy Resources

Ordinance No. 1158 amends ICC Title 2, Section 2.40.070 and adds to Section 20.08.120 of ICC Title 20. The purpose of this ordinance is to support, encourage, and regulate the development of solar and wind resources for the generation and transmission of clean, renewable electric energy. As stated in the General Provisions, development of any renewable energy facility requires a renewable energy permit from the County Planning Commission. Any exemptions from this provision would require a renewable energy impact determination from the County Planning Commission. The ordinance sets forth the minimum requirements necessary for a permit such as mitigation measures, development standards, and financial assurances.

2.4.3 Regional Plans and Programs

The County has the responsibility of interpreting consistency and/or inconsistency between other public agency's land use plans and the County's General Plan or other County plans. The County strives to harmonize its land use plans with public agency actions and considers other agency planning documents to the extent practicable. It is foreseeable that future solar energy development in the SEDAs or the OVSA could occur on public land or land owned by the LADWP. In those instances, other plans currently in development or already approved would be implemented. Renewable energy plans and programs by other agencies that may be implemented within the SEDAs or the OVSA, or in conjunction with future development under the REGPA (i.e., transmission planning) are discussed in this section. Regional multi-jurisdictional planning documents are also described below.

2.4.3.1 Solar Energy Planning

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is a multi-jurisdictional regional planning effort to conserve and manage plant and wildlife communities in the Colorado and Mojave Deserts of California while facilitating the timely permitting of compatible renewable energy projects. The DRECP was established in May 2010 through an agreement between the CEC, California Department of Fish and Wildlife (CDFW), BLM, and US Fish and Wildlife Service (USFWS) to guide renewable energy development in tandem with a multispecies conservation plan. It is being developed under the California Natural Community Conservation Planning Act, the federal Endangered Species Act, and the federal Land Policy and Management Act (FLPMA), and is being prepared by a collaboration of state and federal agencies with input from local governments, environmental organizations, industry, and other interested parties. The DRECP includes the development of solar thermal, utility scale solar PV, wind, and other forms of renewable energy and associated infrastructure (such as electric transmission lines) necessary for renewable energy development.

To oversee the implementation of the DRECP, a group of public agencies formed the Renewable Energy Action Team (REAT), which is responsible for streamlining permit review and issuance time for renewable energy projects and to recommend avoidance measures or alternatives when appropriate. The CEC, CDFW, BLM, and USFWS are the nucleus of the team. Additional agencies include the CPUC, CAISO, National Park Service (NPS), US Environmental Protection Agency (USEPA), and the DOD. To expedite the planning, permitting, and mitigation processes, the REAT identified solar study areas that are potential areas for utility scale solar development, and conservation opportunity areas that are areas with high biological value and are intended for long-term natural resource conservation. The solar study areas were identified based on a number of criteria, including quality of solar resources, suitable slope, proximity to roads and transmission, acreage, and the conservation value of the land. Following further study, the areas were further refined to be available for projects capable of producing 10 MW or more of electricity for distribution. The conservation opportunity areas are areas where private land acquisition or habitat enhancement on public lands would be encouraged to mitigate for development projects. The identification of the conservation opportunity areas does not preclude development in those areas; however, renewable energy projects in those areas would likely have higher mitigation ratios because of higher impacts to biological resources and a longer permit process time.

Counties located within the DRECP area were invited to participate in the DRECP efforts. Inyo County has been active in the DRECP since its inception and, in March 2013, entered into a Memorandum of Understanding (MOU) with the CEC. The MOU provides the framework for a cooperative relationship between the CEC and Inyo County that focuses on effective planning and promotion of renewable energy development. The REGPA is an undertaking to further these efforts. When the final DRECP is completed, it is expected to provide binding long-term federal and state protected species permit assurances while facilitating the review and approval of compatible renewable energy projects. Currently the DRECP is in review with seven alternatives being considered. Although the County is under no obligation to implement the DRECP principles and policies, the County has considered the DRECP in development of the REGPA. The SEDAs were located, in part, based on the solar study areas identified by the Renewable Energy Action Team. All of the SEDAs, except the Laws SEDA, and the southern half of the OVSA fall within the DRECP area. Should the DRECP be approved, and should the County become a signatory of the DRECP, future development under the REGPA within the DRECP area could be expedited by the take coverage under Section 10 of the Endangered Species Act of 1973 provided by the DRECP.

The REAT completed a Best Management Practices and Guidance Manual (REAT 2010) intended to provide guidance to developers and regulatory agencies when preparing, reviewing, and permitting a renewable energy project application. The guidance and best management practices (BMPs) are suggestions for project developers and/or public agencies to help reduce permitting timelines and enhance and maximize environmental protections. The activities and practices listed in the manual support efforts to comply with the National Environmental Protection Act (NEPA), CEQA, and other federal, state, and local environmental energy development and wildlife laws. The County has considered the BMPs proposed in the guidance manual in preparation of the avoidance and minimization measures presented in this PEIR.

Bureau of Land Management Solar Energy Program

The BLM is establishing a solar energy program applicable to utility scale solar energy development. This action was evaluated in the Solar Programmatic Environmental Impact Statement (PEIS) which was an effort by the BLM and DOE to study the availability of BLM land for solar development and transmission projects. In addition to the BLM's program, the PEIS evaluated DOE's proposal to develop new program guidance relevant to DOE-supported solar projects.

The geographic scope of the PEIS for the BLM includes all BLM-administered lands in a six-state study area: Arizona, California, Colorado, Nevada, New Mexico, and Utah. The scope of the impact analysis included an assessment of the potential environmental, social, and economic impacts of utility scale solar facilities and the required transmission connections from these facilities to the existing electricity transmission grid and other associated infrastructure such as roads over an approximately 20-year time frame (until approximately 2030). The PEIS also evaluated BLM land for right-of-way (ROW) access for transmission facilities to make private solar energy development possible on private land. This work identified some BLM land located in Inyo County as available for solar energy ROW authorizations.

The BLM's PEIS work was based on the development of Solar Energy Zones (SEZ). The SEZ are defined areas where the BLM may prioritize and facilitate utility scale production of solar energy and associated transmission infrastructure development. The SEZ are relatively large areas that provide highly suitable locations for utility scale solar development: locations where solar development is economically and technically feasible, where there is good potential for connecting new electricity-generating plants to the transmission distribution system, and where there is generally low resource conflict. The ROW for utility scale solar energy development in the SEZ will be given priority over all other ROWs. In the final PEIS, BLM identified two SEZ in California that are located in Imperial and Riverside counties – none were established in Inyo County. The County appealed the BLM's decision to exclude SEZ in Inyo County based on arguments that:

- The decision was inconsistent with the need identified in the PEIS to provide for utility scale solar energy development on public land, provide flexibility to the solar industry to consider a variety of solar energy projects, optimize existing transmission infrastructure and corridors, and meet projected demand for solar energy development;

- BLM's plans were inconsistent with County plans and policies and, therefore, the results were detrimental to the citizens of Inyo County; and,

- Many lands were excluded based on the BLM's land category of Special Recreation Management Areas (SRMA) and BLM was not able to provide a satisfactory definition for the SRMA designation.

BLM contended that their planning efforts did meet the objectives set forth in the PEIS, which were based on numerous federal orders and mandates and that BLM's work was consistent with officially approved or adopted resource-related plans of Native American tribes, other federal agencies, and state and local governments to the extent that the resource-related plans agreed with FLPMA and other federal laws and regulations they were operating under; and, further explained that a SRMA is an administrative unit where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially as compared to other areas used for recreation and were excluded due to their recreational value. The BLM also advised the County that it could petition BLM for new or expanded SEZ areas in or in proximity to Inyo County and that future efforts to identify priority areas for solar energy development would be most appropriately conducted at the state or field office level as an individual land use planning effort, or as part of an ongoing land use plan revision. The BLM also encouraged the County to participate in the DRECP work, which it has been doing since the DRECP work began.

The PEIS identified the lands that were proposed to be excluded from the SEZ and areas that might have development potential, but would require a variance. Exclusion areas are public lands to be avoided due to potential resource conflicts; to be reserved for other public uses; and, to keep lands that are not well suited for utility scale solar energy development out of the SEZ. Variance areas are those areas that have been identified as possibly appropriate for development, but would require a variance from the BLM prior to any construction. The variance areas are the only areas identified in the PEIS for potential solar energy development in Inyo County. These include areas in the OVSA, and the Owens Lake, Charleston View, and Sandy Valley SEDAs. In ongoing collaborative efforts to coordinate land use planning, the BLM's solar energy program and variance solar areas have been considered in identifying suitable areas for development in the County under the REGPA, and in developing standards and mitigation for future projects under the REGPA.

2.4.3.2 Land Use Planning

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) is a 25-million acre expanse of land in southern California designated by Congress in 1976 through FLPMA, much of which is managed by the BLM. In 1980, the BLM completed the CDCA Plan (BLM 1999), which establishes goals for protection and for use of the plan area. This planning area includes most of Inyo County – from the White and Inyo Mountains, eastward, and south of Owens Lake.

The CDCA Plan designates multiple use classes for the lands involved, and establishes a framework for managing the various resources within the classes. These classes include: (a) Controlled (Class C), in which lands are preserved in a natural state, and access is generally limited to non-motorized, non-mechanized means; (b) Limited use (Class L), in which lands are managed to protect sensitive, natural, scenic, ecological, and cultural resource values, and uses are lower intensity and carefully controlled; (c) Moderate use (Class M), in which lands are managed in a controlled balance between higher intensity use and protection such as mining, recreation, energy, and grazing; (d) Intensive use (Class I), in which lands are managed to meet human needs with reasonable protection and mitigation of natural values. To manage public access and natural resources, the BLM administers travel management programs which consider the most appropriate level of access and modes of travel based on the natural values.

As part of the BLM's land managing effort under the CDCA Plan, conservation areas including Wilderness Study Areas and Areas of Critical Environmental Concern (ACEC) were designated to be afforded a high degree of protection and restricted access and use. The ACECs contain special cultural or natural resources, such as historical and Native American artifacts, endangered plant or animal species, and unique or unusual geology. An ACEC is a conservation ecology program administered by the BLM. It is a specific, legally defined, BLM designation where special management is needed to protect and prevent irreparable damage to important historical, cultural, scenic values, fish and wildlife, and natural resources or to protect life and safety from natural hazards. Designated critical habitat and ACEC boundaries generally, but not always coincide along legal boundaries. The ACECs have special site-specific management prescriptions in order to protect the specific resource for which the ACEC was designated. Development on ACECs may be allowed if such development does not impact the resource for which the ACEC was designated. Approximately 20 areas designated as ACEC are located throughout Inyo County, some of which are located within SEDAs and the OVSA.

Subsequent amendments to the CDCA Plan have been made based on planning areas of the CDCA. The Western Mojave Planning Area and Northern and Eastern Planning Area overlap Inyo County and are described below.

West Mojave Plan

The West Mojave Plan is a proposed Habitat Conservation Plan (HCP) and amendment to the CDCA Plan that: (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other plants and animals and the natural communities of which they are part; and (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts (BLM 2005). The 9,359,070-acre planning area for the West Mojave Plan includes 3,263,874 acres of BLM-administered public lands; 3,029,230 acres of private lands; and, 102,168 acres of lands administered by the State of California within portions of Inyo, Kern, Los Angeles, and San Bernardino Counties. The West Mojave Plan applies to BLM lands in the southwestern portion of the County and the planning area encompasses portions of the Owens Lake SEDA and all of the Rose Valley, Pearsonville, and Trona SEDAs.

The BLM issued a Record of Decision (ROD) based on the West Mojave Plan Environmental Impact Statement/Environmental Impact Report (EIS/EIR). However, the ROD addressed only BLM's amendment of the CDCA Plan, and it did not include actions proposed by state and local governments for non-federal lands, except when specifically identified (BLM 2006). The HCP has not been completed and would require greater specificity for local governments to obtain incidental take permits under the state and federal endangered species acts (BLM 2006). Refer to Section 2.5.3 for more information.

In September of 2009, the Court issued a summary judgment remanding the route designations made in the plan, while keeping other parts of the plan, primarily related to the conservation of species, in place. A remedy order based on this judgment was issued in January 2011 and identified the West Mojave route network, with few changes, would be in place until the remedy order is satisfied.

To satisfy the remedy order, new route designations must be completed, consistent with the court's order. This is the basis for the supplemental West Mojave Plan EIS and specific travel management plans now under development. A total of eight travel management plans are being prepared to designate specific routes in various portions of the West Mojave and implement the route network.

Northern and Eastern Mojave Plan

The Northern and Eastern Mojave Plan is a federal land use amendment to the CDCA Plan that was developed in response to USFWS recovery plans for the desert tortoise (*Gopherus agassizii*) and Amargosa vole (*Microtus californicus scirpensis*) (BLM 2002). The 3.3 million-acre planning area for the Northern and Eastern Mojave Plan includes over 2.7 million acres of BLM-administered public lands. The plan area encompasses the Chicago Valley, Charleston View, and Sandy Valley SEDAs.

The BLM issued a ROD based on the Northern and Eastern Mojave Desert Management Plan Amendment to the California Conservation Area Plan and Final Environmental Impact Statement (BLM 2002). This Plan directs land uses on BLM-administered lands in the planning area, and contains strategies for federally threatened and endangered species conservation and recovery (BLM 202).

2.4.3.3 Inyo County/Los Angeles Long Term Water Agreement

In the 1980s, the County and LADWP collaborated to develop a cooperative water management plan. In 1991, the County and LADWP entered into the Inyo County/Los Angeles Long Term Water Agreement (Agreement) with the overall goal to manage ground and surface water resources while maintaining healthy groundwater dependent vegetation communities found in the Owens Valley and while providing a reliable supply of water for export to Los Angeles and for use in Inyo County. The Inyo County/Los Angeles Standing Committee and the Inyo/ Los Angeles Technical Committee were formed to represent the parties in implementing the goals and principles of the Agreement.

The Agreement contains management strategies for avoiding long term groundwater mining from aquifers of Inyo County, as well as and avoiding or minimizing impacts to vegetation as a result of groundwater pumping or changes in surface water management practices. Vegetation is used as the principal indicator of environmental quality associated with ground and surface water activities in the Owens Valley. As part of this effort, vegetation in the Owens Valley has been classified based on the dominant species documented on vegetation inventories conducted by LADWP between 1984 and 1987. As contained in the Agreement, approximately 227,000 acres of vegetation on the valley floor have been classified as follows:

> A. TYPE A CLASSIFICATION. This classification is comprised of vegetation communities with evapotranspiration approximately equal to average annual precipitation. This classification includes approximately 150,347 acres.
>
> B. TYPE B CLASSIFICATION. This classification is comprised of scrub dominated communities, including rabbitbrush and Nevada saltbush communities with evapotranspiration greater than precipitation. This classification includes approximately 10,390 acres.
>
> C. TYPE C CLASSIFICATION. This classification is comprised of grasslands/meadow vegetation communities with evapotranspiration greater than precipitation. The communities comprising this classification exist because of high groundwater conditions, natural surface water drainage, and/or surface water management practices in the area,

i.e., conveyance facilities, wet year water spreading, etc. This classification includes approximately 42,013 acres.

D. TYPE D CLASSIFICATION. This classification is comprised of riparian/marshland vegetation communities with evapotranspiration greater than precipitation. The communities comprising this classification exist because of high groundwater conditions, natural surface water drainage, and/or surface water management practices in the area, i.e., conveyance facilities, wet year spreading, etc. This classification includes approximately 5,580 acres.

E. TYPE E CLASSIFICATION. This classification is comprised of areas where water is provided to LADWP-owned lands for alfalfa production, pasture, recreation uses, wildlife habitats, livestock, and enhancement/mitigation projects. This classification includes approximately 18,830 acres.

Type A classification is not affected by groundwater pumping or by changes in surface water management practices since such vegetation survives on available precipitation. Areas of Type B, C, and D classification will be managed for groundwater pumping and changes to surface water to avoid causing significant decreases in live vegetation cover, and to avoid causing a significant amount of vegetation comprising these classifications to change to vegetation in a classification type which precedes it alphabetically. Type E classification is lands supplied with water. These lands will be supplied with water and will be managed to avoid causing significant decreases and changes in vegetation.

The method related to the management goal to prevent long-term groundwater mining in Owens Valley is management of groundwater pumping so that the total pumping from any well field over a 20-year period (the current year plus the 19 previous years) does not exceed the total recharge to the same well field area over the same period.

2.4.3.4 1997 Memorandum of Understanding

A Memorandum of Understanding (MOU) was established in 1997 between LADWP, the County, CDFW, SLC, the Sierra Club, and the Owens Valley Committee to resolve conflicts over LADWP actions in Owens Valley concerning groundwater pumping operations and related activities from 1970 to 1990. The MOU establishes a management approach for the Owens Valley ecosystem that emphasizes sustainable use (i.e., use of natural resources through time without causing environmental degradation) and incorporate multiple resource values, including water supply for the City of Los Angeles, Inyo County, habitat preservation, enhancement, and restoration; recreation; livestock grazing; agriculture; and other activities. To date, the primary plans related to the implementation of the objectives and directives contained in the MOU are the Lower Owens River Project (LORP) and the Owens Valley Land Management Plan (OVLMP). Together, these two plans encompass nearly all City of Los Angeles-owned property in the Owens Valley of Inyo County.

2.4.3.5 Lower Owens River Project and Ecosystem Management Plan

The LORP is a joint project between LADWP and Inyo County with the purpose of implementing a large scale habitat restoration project along the Lower Owens River. The LORP was proposed as mitigation for impacts related to groundwater pumping by the LADWP from 1970 to 1990. The LORP was originally identified in the Inyo County-Los Angeles Long-term Water Agreement (1991) and subsequently augmented by the 1997 MOU. Under the Agreement, the County and LADWP committed to rewater the 62-mile-long reach of the Owens River that was left essentially dry after the river was diverted into the Los Angeles Aqueduct in 1913. The LORP involves four primary restoration efforts: (1) releasing water to the Lower Owens River to enhance native and game fisheries and riparian habitats along 62 miles of the river; (2) providing water to the Owens River Delta to maintain and enhance various wetland and aquatic habitats; (3) enhancing a 1,500-acre off-river area with seasonal flooding and land management to benefit wetlands and waterfowl; and, (4) maintaining several off-river lands and ponds. The project also includes construction of a pump station to capture and recover some of the water released to the river. In addition, the project includes range improvements and modified grazing practices on leases in the LORP project area (LADWP and EPA 2004). The LORP area falls within the OVSA and Owens Lake SEDA.

2.4.3.6 Owens Valley Land Management Plan

The OVLMP was prepared by the LADWP pursuant to the 1997 MOU, and the County board approved the plan in 2010 (LADWP 2010). The OVLMP is a resource management guide for the LADWP-owned non-urban lands in Inyo County, excluding the LORP area. The purpose of the plan is to implement sustainable land and water use management to lead to more desirable ecological conditions for both upland and riverine-riparian systems in the planning area. The OVLMP provides a framework for implementing management actions through time, monitoring resources, and adaptively managing changed land and water conditions. These management actions include maintaining and managing flows along the Owens River for riverine-riparian management, initiating conservation strategies for threatened and endangered species, establishing guidelines to protect cultural resources, and managing land uses in the valley (e.g., grazing, recreation, commercial uses) (LADWP 2010). A primary aspect of the OVLMP is grazing management aimed at implementing sustainable practices, balancing agricultural needs and other resource needs based on the carrying capacity of the land. Grazing management has been implemented through a series of LADWP-administered grazing leases to private parties.

2.4.4 Transmission Planning

State and federal agencies and utilities in California have completed many transmission planning processes, primarily focusing on the transmission needed to integrate large amounts of renewable energy. Inyo County has participated in a number of these planning procedures as discussed in the County's Background Report (Inyo County 2013; Appendix C). The transmission planning processes indicate that the high level upgrades needed across the state to meet the RPS goals by 2020 do not target upgrades in Inyo County. The DRECP's Transmission Technical Group looked at the development of 20,000 MW of renewable energy in the California desert by the year 2040 and identified a specific transmission upgrade of about 64 miles between Owens Dry Lake and LADWP's Barren Ridge Substation in Kern County. The Renewable Energy Transmission Initiative (RETI), West-wide Energy Corridor PEIS, the California Transmission Planning Group, and transmission planning in the State of Nevada have also evaluated the need for additional transmission through Inyo County.

2.4.4.1 Electric Transmission Corridor Designation Under Senate Bill 1059

In 2006, Senate Bill (SB) 1059 was passed and signed into law by the governor. This law established an electric transmission corridor designation process to link electric transmission planning processes with transmission permitting to assure the timely permitting and construction of needed transmission facilities. The law grants the CEC the authority to designate electric transmission corridors to help assure that the state can develop a robust and reliable high-voltage electric transmission system that will meet future electricity needs, reduce congestion costs, integrate renewable resources into the state's energy mix, and meet the state's critical energy and environmental policy goals. Corridors could be proposed by a utility, a state or local agency, or by the CEC itself.

When enacted, SB 1059 created a new chapter to the PRC, starting at PRC Section 25330, titled "Chapter 4.3: Designation of Transmission Corridors." The regulations developed pursuant to this chapter are in the CCR, Title 20, Sections 2320 through 2340. SB 1059 provides entities such as Inyo County the opportunity to work with the CEC to propose and evaluate locations that may be appropriate for designation as an electric transmission corridor.

2.4.4.2 West-Wide Energy Corridor Programmatic Environmental Impact Statement

Section 368 of the Energy Policy Act of 2005, Public Law 109-58 (HR 6), directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate under their respective authorities corridors on federal land in 11 western states, including California, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (energy corridors). As part of that effort, the USFS and BLM evaluated designated potential energy corridors on federal lands in a PEIS. The result was the designation of specific corridors across the 11 western states. After publications of the ROD, multiple organizations filed a complaint that raised challenges to the agencies' RODs. The BLM, USFS, DOE, and the Department of Justice worked collaboratively with the plaintiffs to develop a settlement to mutually resolve the challenges in the Complaint. The settlement required the agencies to complete a MOU addressing period corridor reviews; update agency guidance; update agency training; and complete a corridor study. The BLM, USFS, and DOE executed a MOU on July 8, 2013 that includes a work plan for the Regional Periodic Reviews and approved a work plan for the corridor study. In December 2013, the 368 Working Group released a 2013 annual report as required by the settlement. A subgroup has been formed to designate regions and prioritize the top three regions to be studied.

Within Inyo County, the PEIS defined a corridor on BLM lands near US 395 and within the Bishop Resource Management Plan area. The corridor (Corridor 18-23) was designated as 1,320 feet wide within the Bishop Resource Management area and as 10,560 feet wide within the CDCA (BLM 2009).

2.4.4.3 Renewable Energy Transmission Initiative

The RETI was a statewide initiative to help identify the transmission facilities needed to accommodate California's renewable energy goals, support future energy policy, and facilitate transmission corridor designation and transmission and generation siting and permitting. The

RETI was a collaborative process between the CPUC, Energy Commission, CAISO, publicly-owned utilities, Pacific Gas and Electric (PG&E), San Diego Gas and Electric, SCE, renewable energy developers, the Natural Resources Defense Council, Department of Ratepayer Advocates, and Native American tribal representatives, among others.

The RETI developed and evaluated Competitive Renewable Energy Zones (CREZ) in California and identified where renewables could be most cost effective and least environmentally constrained. The RETI analyzed 3,750 MW of potential development in the Owens Valley CREZ and determined transmission upgrades and a new transmission right-of-way would be needed access this CREZ and to transport this energy to a load center. The RETI determined that the Owens Valley CREZ environmental score was below (i.e., had fewer impacts than) the median environmental score but its economic score was much higher than the median score. The Owens Valley CREZ was ranked the second most costly in-state renewable energy zone (RETI 2010a).

2.4.4.4 California Independent System Operator and the California Transmission Planning Group

The California Transmission Planning Group (CTPG) conducts joint transmission planning studies and allows for coordination between members' transmission planning activities. The primary objective is to provide a foundation for a statewide transmission plan that identifies the infrastructure needed to meet California's RPS by 2020. In the CTPG's most recent transmission plan, the Phase 3 of the 2011 Statewide Transmission Plan, the CTPG used multiple inputs to determine "high" and "medium" potential transmission upgrades. No such upgrades were determined in Inyo County (CTPG 2012). Some of the earlier CTPG studies (2010 CTPG Draft Phase 4 Study Report) did identify a need for upgrades in Owens Valley if additional renewable energy were to be located here.

The CAISO prepared a 2012/2013 Conceptual Statewide Transmission Plan Update for the 2013/2014 Transmission Planning Cycle that drew on the efforts of the CTGP. The conceptual plan focused on the transmission upgrades across the state needed to meet the state's RPS goal by 2020. No projects were identified in Inyo County but some upgrades in the southern Nevada Eldorado area were identified to bring energy into the state from southern Nevada (CAISO 2013).

2.4.4.5 Nevada Conceptual Renewable Energy Zone Transmission Plan

As part of the requirements defined in Nevada AB 387 and NAC 704.9385.6, Nevada Power Company and Sierra Pacific Power Company prepared a Conceptual Renewable Energy Zone Transmission Plan. The plan was for informational purposes only and focused on renewable energy zones in Nevada. The S-1 solar resource zone was located along the Nevada/California border near the Amargosa Valley. The Study anticipated that an estimated 5 to 15 mile long interconnection line would be needed to access renewable energy in this area with an estimated $13.2 to $12.8 million (2009 US dollars cost; Nevada Power Company 2012). This solar resource zone is in proximity to the southeast corner of Inyo County and expanded transmission capacity in this region would likely provide potential access opportunities for renewable development in Inyo County to be delivered to California and Nevada markets.

2.4.4.6 Nevada Transmission Initiative Routing Study

The Transmission Initiative Routing Study (February 2012) was prepared for the Nevada Energy Assistance Corporation to evaluate the viability of high voltage transmission lines for the benefit of renewable energy development and export out of Nevada. One of the preferred corridor opportunities would exit Nevada to the south, cross the northeastern corner of Inyo County, then follow the US 395 corridor south to Ridgecrest where it would head southwest until reaching the Antelope Substation near Lancaster. The project was analyzed as a 290-mile 500 kV transmission line with a cost of $595 million dollars (2012 USD). It also considered a potential substation near Ridgecrest that could accommodate California resources if requested. This substation was not included in the cost of the project. A second route through the southeastern corner of Inyo was also considered as part of the study but was found to be constrained by established BLM wilderness and wilderness study areas and was determined to have limited feasibility.

2.5 MILITARY READINESS

The China Lake NAWS is partially located within Inyo County (approximately 700 square miles of the China Lake NAWS is located in the County, the rest is in San Bernardino and Kern Counties). Along with the land that is managed by the Navy, much of the County's airspace is included in the Navy's flight training path and/or the R-2508 Airspace Complex (flight routes). These areas are important to the Navy's mission and the County must be cognizant of them as it plans for renewable solar energy as certain types of solar energy development (power towers) can cause harmful effects on aircraft instrumentation. Similarly, the Edwards Air Force Base is located in Kern County, and may use military airspace in the County. Refer to Figure 2-5 for the locations of the military airspace in the County.

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3.0 PROJECT DESCRIPTION

3.1 PROJECT OVERVIEW

3.1.1 Background

The County is proposing to update its General Plan to include policies for solar energy development within the County. The proposed REGPA involves identifying new and modified General Plan goals, policies, and implementation measures, including SEDAs, based on the results of an Opportunities and Constraints Technical Study (OCTS; Aspen 2014; Appendix D); the County's Background Report (Inyo County 2013; Appendix C); work completed in 2011; and, input from stakeholders and the public. From this foundation of work and outreach, eight proposed SEDAs have been identified and are analyzed in this PEIR.

The REGPA is being prepared with a grant from the CEC which utilizes funds from the Renewable Resource Trust Fund. These funds were made available to the County because of its participation in the DRECP. The DRECP was established in May 2010, by an agreement between the CEC, CDFW, BLM, and the USFWS to guide renewable energy development in tandem with a multispecies conservation plan for the Mojave and Colorado Desert regions. Counties located within the DRECP area were also invited to participate in the DRECP efforts. Inyo County has been active in the DRECP since its inception and in March 2013 entered into a MOU with the CEC. The MOU provides the framework for a cooperative relationship between the CEC and Inyo County that focuses on effective planning and promotion of renewable energy development.

To further these efforts, the County is proposing the REGPA to update its General Plan with policies designed to facilitate the responsible development of eligible renewable solar energy resources. The REGPA is the proposed project and is the focus of this PEIR. The REGPA addresses solar energy development, since geothermal and hydro-electric generation are already adequately addressed in the General Plan and the Zoning Code, and wind energy has been excluded from the REGPA based on public input.

In addition to its involvement with the DRECP, the County has been active in the large scale planning for renewable energy development throughout the desert southwest by involvement in the California Transmission Planning Group, the Renewable Energy Transmission Initiative, the BLM Solar PEIS and the West-wide Energy Corridor Program Environmental Impact Statement (refer to Section 2.4.3). The County's involvement in these groups and initiatives has been focused on better land use and transmission opportunities for responsible renewable energy development in Inyo County. In 2010 the County adopted ICC Title 21: Renewable Energy Ordinance, which was developed to encourage and guide the development of solar and wind resources in the County.

In 2011, the County adopted a REGPA; it was however, rescinded due to litigation brought forth by environmental groups over the adequacy of the CEQA document that addressed it. In 2013, the County initiated the development of a new REGPA, which is the focus of this PEIR. The County prepared a background report for the new REGPA work in October 2013 (Inyo County 2013) and held multiple stakeholder and public meetings in November and

December 2013 to provide opportunities for public involvement in the process. The County Background Report provides an overview of the County's previous and current efforts to include policies for renewable energy development in the General Plan and provides a foundation to identify areas that may be appropriate for future renewable energy development based on a set of criteria.

As previously mentioned, the County also prepared an OCTS in February 2014 (Aspen 2014). The OCTS combines resource and infrastructure requirements for renewable energy development with key environmental considerations in the County and with available spatial data to identify the County's renewable energy resources and potential locations where development of these resources can most feasibly occur. The OCTS identifies areas that would result in the least environmental impacts and so would present the best opportunities for streamlined processing of renewable energy development applications, and identifies levels of constraint for the identified areas.

On February 26, 2014 the Inyo County Planning Commission received a presentation on the new REGPA and took public comment. Following that meeting, the Inyo County Board of Supervisors conducted a series of workshops between March and May 2014 and requested changes to the REGPA. In response to extensive input from the public, wind energy was removed from consideration. The proposed development areas as presented in the REGPA were revised to utilize only existing transmission facilities in the County's western region. The remaining areas in the County with potential development areas were greatly reduced based on public input, and the resulting development areas are the SEDAs evaluated in this PEIR.

Most of the concern expressed by the public dealt with renewable energy development in the Owens Valley, in large part, based on potential impacts to the visual characteristics of the valley. As the County developed the 2013 REGPA, the following criteria were used to help refine appropriate areas for solar energy development in the SEDAs:

- areas with the highest energy generation potential;
- availability of transmission;
- studies and plans conducted by other jurisdictions and groups;
- land with the appropriate slope and development characteristics;
- areas of avoidance including, potentially, critical habitats, military concerns, cultural and historic resources, and scenic resources; and,
- the visions and goals of the public.

To assist the County in determining the focus and scope of analysis for this PEIR and in accordance with the requirements of the CEQA, the County issued a NOP on June 11, 2014, to government agencies, special service districts, organizations, and individuals with an interest in or jurisdiction over the project. The issuance of the NOP ensures early consultation on the scope of the PEIR. The public comment period on the NOP ended on July 10, 2014.

During the public comment period on the NOP, the County conducted a series of three public scoping meetings and two scoping sessions. At each scoping meeting/session, participants were given an opportunity to ask questions to clarify their understanding about the REGPA and CEQA process. Questions were addressed prior to the formal scoping session at each meeting.

Participants offered a wide range of questions that are summarized into the three main issues listed below with corresponding responses from the project team.

- **Process for and extent of CEQA streamlining provided for future project-level EIRs as a result of this Program EIR.** Staff clarified that, as a result of this Program EIR, streamlining may be allowed for subsequent project-level environmental analyses that address proposed solar energy projects that are located in the proposed SEDAs. However, in such cases, the County will retain significant latitude to determine both a future project's need for a project-level EIR, and the level of EIR analysis that will be required.

- **Level of County authority over permitting, and authority to impose the REGPA and EIR mitigation measures on future solar projects that would occur on federally owned or LADWP land.** The County has limited jurisdiction over the approval and environmental impact analysis required for projects sited on federal or LADWP land. However, these agencies are required to consider consistency with the County's General Plan as a part of their environmental analysis under CEQA.

- **Process for the separate study of Owens Valley will proceed, and how MW cap requirements and boundaries for the Western County will be affected.** With the exception of the Laws SEDA, potential solar projects in the Owens Valley will be considered in a separate, subsequent planning process. However, MW caps and transmission policies pertaining to the Owens Valley are established in the REGPA.

3.2 PROJECT OBJECTIVES

The overall purpose of the proposed project is to regulate and direct the type, siting, and size of future renewable energy development within the County through adoption of land use policies that are consistent with and meet the broader goals and visions for the County as expressed in the Inyo County General Plan. The seven specific objectives related to this purpose are as follows:

1. Provide for solar energy development opportunities in Inyo County to generate electricity from solar resources in accordance with the goals established by California State legislation and local policies regarding renewable energy.

In 2002, the State of California passed SB 1078, the California Renewables Portfolio Standard (RPS). Originally, the RPS required that investor-owned utilities, electric service providers, and community choice aggregators procure 20 percent of electricity from eligible renewable energy resources by 2017. In 2006 the RPS was accelerated by SB 107 to meet the 20 percent goal by 2010, and in 2011 it was expanded under SB 2 to require 33 percent by 2020. It is one of the most ambitious renewable energy standards in the country. Recently Governor Jerry Brown stated that he thought it is possible to reach a 40 percent RPS, opening the possibility to make the standards even more ambitious.

In light of the RPS, interest in renewable energy generation grew in Inyo County making it apparent to County staff and officials that structure and guidance would be required to ensure that potential development is conducted in a manner consistent with the County's overall goals for development. The policies and revisions to the General Plan under the proposed project set the limits of where, when, how, and even if, renewable energy generation facilities will be built; include provisions for areas identified in the County that are appropriate for renewable energy development; define what specific factors must be met before development can commence; state under what conditions a facility can be built; and, define the requirements for the termination of a facility.

2. Focus future solar energy development projects to designated development areas that have been selected through an analysis of geographic, physical, political, cultural, environmental, and socioeconomic opportunities and constraints.

Under the proposed project, the County has identified areas that may be appropriate for solar energy development projects, called SEDAs. The SEDAs will be incorporated into the General Plan with policies and implementation measures guiding development within each SEDA. By identifying SEDAs and incorporating them into the General Plan, the County is facilitating feasible solar energy development within its boundaries. The County has enacted ordinances and polices supporting, encouraging, and regulating the development of renewable energy resources. ICC Title 21 includes standards for development and a framework for permitting such development that includes: entering into a renewable energy development agreement; obtaining a renewable energy permit; and/or, a renewable energy impact determination. The SEDAs will direct future developers to areas the County has identified as most appropriate for development and away from areas that are not.

3. Minimize direct and indirect impact from future solar energy development on the physical, biological, cultural, political, and socioeconomic environments.

In order to preserve the County's physical, biological, cultural, political, and socioeconomic environments, and allow future development to be implemented in an economically feasible manner, the County identified the potential SEDAs. An OCTS (Aspen 2014) was prepared for the proposed project in which quantifiable data was used to map sensitive resources throughout the County. This data was then used to identify locations that were more or less sensitive based on the available data. The proposed development areas are in locations with the relatively least impact to the resources evaluated. In identifying these development areas, development is directed to avoid and minimize impacts to those areas, and encourage development in areas deemed more appropriate. Site specific analysis of sensitive resources will be conducted prior to development in any of the SEDAs.

Socioeconomic issues potentially arising from solar energy development are paramount to the County. The County believes that citizens of the County should equitably share in the benefits resulting from the development of solar energy resources. Such development should provide benefits to the County and its citizens, and direct, indirect, induced, and cumulative impacts to public services, utilities, and infrastructure should be offset. Biological mitigation should be guided to public lands (and particularly designated wilderness) to minimize further losses in the County's small private land base. Mitigation on public lands should take into account and minimize impacts to access and to multiple uses of the lands. Overall, solar energy development should seek to enhance, not harm, the County's tourist economy.

4. *Collaborate effectively with other public resource agencies, tribal governments, non-governmental organizations, and citizens/residents of Inyo County, and to utilize best available scientific information to aid impact assessment of future solar energy development.*

To date, the County has collaborated considerably with other public resource agencies, tribal governments, non-government organization, and the public throughout the process of developing the SEDAs and identifying issues/areas of concern. The County conducted a series of seven stakeholder meetings held November 12 through 14, 2013 and three community workshops held December 3 through 5, 2013. The stakeholder meetings were held in concert with the DRECP update and included the following types of groups: local, state, and federal environmental organizations; renewable energy developers; County and federal elected and appointed officials; the military, local businesses, and community organizations; local tribes; and civic and chamber of commerce members. Additionally, the County held three public scoping meetings and two public scoping sessions during June 2014 to introduce the project. Each meeting solicited input on the purpose and draft criteria and policy concepts for the REGPA, and any other thoughts or concerns about the process or content of the REGPA.

The proposed REGPA contains land use and mineral and energy resources implementation measures related to the County's previous and ongoing coordination with the agencies, tribes, and the public. These include agency coordination for siting to minimize impacts to agency operations or interests (Land Use Implementation Measures 1 and 2), and to encourage development in concert with other agency, organizations, or private property owner land uses and plans (Land Use Implementation Measures 7 and 8). The REGPA is being developed and implemented in cooperation with the DRECP and in consultation with LADWP, SCE, and in consideration of the VEA in Nevada. Mineral and Energy Resources Implementation Measure 4 requires that future development proposals be reviewed in consultation with other local, regional, state, out of state, and federal agencies, local Tribes, and Inyo County citizens.

5. *Locate future solar development near existing electrical conveyance facilities.*

The energy load needed by Inyo County is relatively small compared to the potential solar energy generation from utility scale developments. Therefore, the majority of potential solar electric energy generated in the County would serve areas outside of the County, which requires adequate transmission facilities to transfer the energy to the outside areas. To minimize time consuming and costly upgrades; new facility construction; and, to maximize existing facilities, the County has focused the development areas identified in the REGPA along the existing LADWP transmission systems and along the conceptual VEA system. These would be the least costly and most time effective conveyance systems for development.

6. *Identify the total allowable capacity and developable acreages per solar energy group and SEDA.*

Mineral and Energy Resource Policy MER-2.3 of the REGPA contains the total allowable energy generation capacity and the associated developable acreages for each SEDA. These caps are based on an analysis of capacity of the existing transmission facilities in the County, and the location of the SEDA relative to the transmission facility. By assigning caps to the development areas, the County is able to inventory energy transmission capacity as developments are implemented, and track the availability of transmission capacity for future projects.

7. Provide for small scale, community scale, and/or distributed generation solar energy production opportunities throughout the County.

As previously stated, ICC Title 21 includes standards for solar energy development. The County also tries to encourage renewable energy development and a framework for permitting by requiring a renewable energy development agreement, a renewable energy permit, or a renewable energy impact determination for each solar renewable energy project. The County currently encourages small scale solar energy development with an expedited permitting process pursuant to ICC Title 21.

The proposed REGPA contains policies encouraging development of small scale, community scale, and/or distributed generation solar energy production throughout the County.
Policy LU-1.18 allows community scale solar energy generation outside of the SEDAs and in any zoning district of ICC Title 18.

3.3 PROJECT CHARACTERISTICS

The primary elements of the proposed REGPA, potential areas for development, and the solar development considered in the REGPA are described below.

3.3.1 General Plan Amendment

Inyo County is proposing to update its General Plan to add policies for responsible renewable solar energy development.

The REGPA provides structure and guidance to ensure that potential solar energy development is conducted in a manner consistent with the County's overall goals for development. The policies contained in the REGPA sets limits of where, when, how, and even if, renewable energy generation facilities will be built; and includes: provisions for actual sites identified in the County that may be appropriate for renewable energy development; identifies the specific factors that must be met before development can commence; specifies the conditions that must exist before a facility can be built; and the requirements for the termination and decommissioning of a facility. By implementing the REGPA, the County hopes to provide the proper structure and guidance for potential solar energy development and keep such development consistent with the overall vision of the County that was adopted through a thorough public process and expressed in the current General Plan.

The REGPA includes the following proposed changes to the General Plan:

Government Element

No change.

Land Use Element

<u>New Land Use Definitions</u>

Renewable Energy Solar Facility

Any electric transmission line, solar thermal power plant (or PV) power plant to be constructed in Inyo County. A Renewable Energy Solar Facility does not include Small scale Renewable Energy Solar Facilities or a pilot or proof of a concept power plant.

Utility scale Renewable Energy Solar Facility

A Renewable Energy Solar Facility that produces more than 20 MW of electricity for off site use, consumption and/or sale, including all equipment and accessory structures related to the facility, including but not limited to solar collector arrays, mounting posts, substations, electrical infrastructure, transmission lines, operations and maintenance buildings, appurtenant energy storage facilities and other accessory structures.

Distributed Generation Renewable Energy Solar Facility

A Renewable Energy Solar Facility that produces 20 MW or less of electricity for off-site use, consumption and/or sale.

Community scale Renewable Energy Solar Facility

A Renewable Energy Solar Facility that uses renewable solar resources to generate energy for a specific community's use and located near the community it serves.

Small scale Renewable Energy Solar Facility

A facility that uses renewable solar resources to generate energy for on-site use such as roof-top or ground mounted PV panels.

<u>New Land Use Policies</u>

- Policy LU-1.17: Utility scale and Distributed Generation Renewable Energy Solar Development. The County shall consider Utility scale and Distributed Generation Solar Energy Facilities: within SEDA overlays; or outside of SEDAs if the facility is proposed to be located over or along the Los Angeles Aqueduct; and within any zoning district under Title 18 of the [ICC]and pursuant to [ICC] Title 21. Based on site-specific studies and appropriate environmental review, the County may process Utility scale and Distributed Generation Renewable Energy Solar Facilities within the SEDA, or over and along the Los Angeles Aqueduct, pursuant to [ICC] Title 21. Potential social, economic, visual and environmental impacts from Utility scale and Distributed Generation Renewable Solar Energy Facilities must be avoided, minimized or mitigated to an acceptable level. Appurtenant transmission and storage facilities and related infrastructure may be constructed and operated within any Land Use Designation and any zoning district under Title 18 of the [ICC] and in accordance with the standards set forth by CEQA. Development standards, including minimum parcel size, may be specified in a Renewable Energy Permit or Renewable Energy Development Agreement in lieu of the standards specified herein, as permitted by [ICC] Title 21.

- Policy LU-1.18: Community scale Renewable Energy Solar Development. The County shall consider Community scale Renewable Energy Solar Facilities in and outside of a SEDA and within any zoning district under Title 18 of the [ICC] and pursuant to [ICC] Title 21. Community scale Renewable Energy Solar Facilities shall only generate electricity for the use of specified communities and may only export energy as part of a net-metering plan. Potential social, economic, visual and environmental impacts from Community scale Solar Energy Facilities must be avoided, minimized, or mitigated to an acceptable level. Development standards, including minimum parcel size, may be specified in a Renewable Energy Permit or Renewable Energy Development Agreement in lieu of the standards specified herein, as permitted by [ICC] Title 21.

- Policy LU-1.19: Renewable Energy Solar Development in the OVSA. Renewable Energy Solar Development in the OVSA will be subject to a set of criteria identified through further planning efforts for identifying and mapping areas appropriate within the OVSA for solar energy development, and pursuant to [ICC] Title 21.

<u>New Land Use Implementation Measures</u>

1. The County shall coordinate with the Department of Defense, the United States Navy China Lake, and Edwards Air Force Base personnel on the siting of Renewable Energy Solar Facilities in a manner that does not significantly impact military readiness. Issues to be addressed in the coordination include: activities that produce electromagnetic and frequency spectrum interference, light and glare, dust and smoke, heat generation and the effects on military equipment testing and operations, including proposed development heights, personnel training, and flight activities.

2. The County shall coordinate with agencies managing lands within the County's boundary to avoid, minimize, or mitigate potential impacts from Renewable Energy Solar Facilities to an acceptable level as determined by the County.

3. The County shall consider seeking compensation for the loss of revenues from potential Renewable Energy Solar Facilities that are not developed within the County due to possible impacts on military readiness, special status species, and aesthetics, and/or other barriers to development of appropriate Renewable Energy Solar Facilities. Methods of compensation include but are not limited to Payment-in-lieu of Taxes (PILT) or similar programs.

4. The County shall work with utilities and Renewable Energy Solar Facility Developers to encourage collocation of transmission and intertie facilities.

5. The County shall encourage Renewable Energy Solar Facility development projects (1) on disturbed lands such as solid waste and wastewater treatment facilities, brown fields, including abandoned mine sites; (2) within Desert Renewable Energy

Conservation Plan Development Focus Areas; (3) within Variance Areas identified by the Solar Programmatic Environmental Impact Statement, and (4) that are distributed generation projects.

6. The County shall encourage the development of Small scale, Community scale, and Distributed Renewable Energy Solar Facilities.

7. The County shall work with the Bureau of Land Management to designate new Solar Energy Zones in Inyo County.

8. The County shall encourage utilization of State Trust Lands for Renewable Energy Solar Facility development and/or mitigation from such development through land trades or other mechanisms.

Economic Development Element

<u>New Economic Development Policies</u>

- Policy ED-4.4: Offset the Cost to the County for Service Provision. Renewable Energy Solar Facility development shall be required to provide the means to offset the costs to the County, including but not limited to, the cost of infrastructure improvements and County services, and lost economic development potential. Economic impacts from Renewable Energy Solar Facility development identified by the County shall be mitigated or offset.

- Policy ED-4.5: Employ and Train Local Labor. The County shall encourage Renewable Energy Solar Facility developers to employ the local labor force, during development and for long-term facility maintenance and provide educational and training opportunities, as practicable.

- Policy ED-4.6: Compensation to Local Communities. The County shall encourage renewable solar energy developers to provide compensation in the form of reduced rates for communities impacted by development.

- Policy ED-4.7: Provide Transient Housing. The County shall encourage renewable solar energy developers to help provide transient housing during the construction of solar energy facilities to minimize impacts to tourist accommodations.

Housing Element

- No change.

Circulation Element

- No change.

Conservation/Open Space Element

<u>Modified Existing Agricultural Resources Policy</u>

Policy AG-1.3: Conversion of Agricultural Land. Discourage conversions of productive agricultural lands for urban development, and encourage avoidance of the use of productive agricultural lands for Renewable Energy Solar Facility development.

<u>New Mineral and Energy Resources Definitions:</u>

Community scale Renewable Energy Solar Facility

A Renewable Energy Solar Facility that uses renewable solar resources to generate energy for a specific community's use and located near the community it serves.

Distributed Generation Renewable Energy Solar Facility

A Renewable Energy Solar Facility that produces 20 MW or less of electricity for off-site use, consumption and/or sale.

Small scale Renewable Energy Solar Facility

A facility that uses renewable solar resources to generate energy for on-site use such as roof-top or ground mounted photovoltaic panels.

Solar Energy

Energy that is generated through the conversion of the sun's radiation into electricity.

Solar Energy Development Areas (SEDA)

General Plan Overlay Areas identified by the County, at a landscape scale, as potentially appropriate, for renewable solar energy development.

Utility scale Renewable Energy Solar Facility

A Renewable Energy Solar Facility that produces more than 20 MW of electricity for off-site use, consumption and/or sale, including all equipment and accessory structures related to the facility, including but not limited to solar collector arrays, mounting posts, substations, electrical infrastructure, transmission lines, operations and maintenance buildings, and other accessory structures.

<u>New Mineral and Energy Resources Goal</u>

- Goal MER-2: Avoid, Minimize, Mitigate. Ensure that Renewable Energy Solar Facility development is conducted appropriately to avoid, minimize, or mitigate the impacts from such development on the social, economic, visual, and environmental resources of the County.

New Mineral and Energy Resources Policies

- Policy MER-2.1: Encourage Small scale. The County shall continue to encourage Small scale Renewable Energy Solar Facilities, such as roof-top and ground mounted solar; Distributed Generation Renewable Energy Solar Facilities; and Community scale Renewable Energy Solar Facilities that serve specific communities.

- Policy MER-2.2: Solar Energy Development Areas (SEDA). The County shall maintain a Land Use Diagram of areas where Utility scale and Distributed Generation Renewable Energy Solar facilities may be appropriate.

- Policy MER-2.3: SEDA Land Inventory. As illustrated in Table 3-1, the County proposes caps on the total megawatts that may be produced within each SEDA as well as the total acreage of Renewable Energy Solar Facilities that may be developed within each SEDA. (Distributed Generation and Community scale Solar Facilities are excluded from the SEDA caps.)

Table 3-1
TOTAL ALLOWABLE MEGAWATTS AND DEVELOPABLE AREA PER SOLAR ENERGY GROUP BY SOLAR ENERGY DEVELOPMENT AREA

Solar Energy Group	Solar Energy Development Area	Total Allowable Capacity (MW)	Total Allowable Developable Area (acres)
Western*	Laws	20	120
	Owens Lake	250	1,500
	Rose Valley	100	600
	Pearsonville	100	600
	Owens Valley Study Area	250	1,500
	Western Solar Energy Group Total	**250**	**1,500**
Southern	Trona	100	600
	Southern Solar Energy Group Total	**100**	**600**
Eastern	Chicago Valley	50	300
	Charleston View	400	2,400
	Sandy Valley	100	600
	Eastern Solar Energy Group Total	**550**	**3,300**

MW = megawatts
*The Western Solar Energy Group includes four Solar Energy Development Areas (SEDAs) – Laws, Owens Lake, Rose Valley, and Pearsonville – and the Owens Valley Study Area which is not a SEDA. The Owens Valley Study Area has been identified for potential development equaling the total allowable capacity for the Western Solar Energy Group. The SEDAs or Owens Valley, or a combination may be developed to not exceed the total allowable capacity of 250 megawatts.

- Policy MER-2.6: Avoid, Minimize, or Mitigate Impacts. The County shall work with renewable energy solar developers and other agencies to avoid, minimize, or mitigate impacts to the social, economic, visual, and environmental resources of the County from Renewable Energy Solar Facility development.

- Policy MER-2.7: Dust Control. The County shall work with renewable energy solar developers to ensure that dust creation during the construction and operations of a renewable energy solar facility are avoided to the extent practicable.
- Policy MER-2.8: Reclamation Planning. The County shall work with Renewable Energy Solar Facility developers to provide and implement a reclamation plan to return the site of each project to pre-project conditions or another appropriate state (i.e., native, reuse, etc.). The reclamation plan shall include financial assurances, such as bonding, for the cost of decommissioning, reclaiming and revegetating (if required) each Renewable Energy Solar Facility including removal of all equipment and accessory structures related to the facility, including but not limited to solar collector arrays, mounting posts, substations, electrical infrastructure, transmission lines, operations and maintenance buildings, appurtenant energy storage facilities and other accessory structures.
- Policy MER-2.9: Renewable Energy Solar Facility Development along the Los Angeles Aqueduct. The County shall encourage the use of land over and along the Los Angeles Aqueduct for Renewable Energy Solar Facility development. These areas may not be included in the SEDA, but are subject to the Western Solar Energy Group cap on the total megawatts that may be produced with the Western Solar Energy Group.

<u>New Mineral and Energy Resources Implementation Measures</u>

1. Continue the Expedited Permitting Process for Photovoltaic Systems and continue providing how-to information for Small scale Renewable Energy Solar Facilities.
2. Create and maintain a SEDA Overlay land use diagram and an inventory of the lands included in it.
3. Create and maintain a SEDA Table of Megawatts and Corresponding Acreages for Renewable Energy Solar Facility development.
4. Review Renewable Energy Solar Facility proposals for ways to avoid, minimize or mitigate the potential impacts to the County’s social, economic, visual and environmental resources, in consultation with other local, regional, state, out-of-state and federal agencies, local Tribes, and Inyo County citizens.
5. Collect and disseminate strategies to avoid, minimize or mitigate impacts from renewable energy solar facilities.
6. Periodically review, and as necessary update, the SEDA Overlay and Table.
7. Work with applicants to maintain pre-project vegetation during the construction and operation of renewable energy solar facilities and/ or to plant new native, low-water-use vegetation, or agriculture crops as dust control measures.

8. Encourage the use of new materials and technologies as they evolve for dust control measures.

9. Encourage the exploration and feasibility of onsite energy storage including potential adverse impacts.

10. Review and approve reclamation plans and financial assurances at the onset of Renewable Energy Solar Facility development projects and oversee the full implementation of reclamation plans at the decommissioning and termination of Renewable Energy Solar Facilities.

11. Encourage development of energy storage technologies to maximize efficient renewable solar energy generation.

12. Encourage mitigation for Renewable Energy Solar Facility projects to be located on public lands, and particularly in designated wilderness areas.

<u>New Water Resources Policy</u>

- Policy WR-3.5: Sustainable Renewable Energy Solar Development. The County shall require Renewable Energy Solar Facility development to incorporate measures to minimize water consumption and use of potable water and encourage the use of reclaimed water and/or practices that do not require water during construction, the life of the facility, and during reclamation.

<u>New Visual Resources Policies</u>

- Policy VIS-1.8: Renewable Energy Solar Development, Light and Glare, Night Skies. The County shall encourage siting and screening to avoid, minimize or mitigate significant changes to the visual environment from Renewable Energy Solar Facility development during construction and operations including avoiding or minimizing light and glare, and impacts inconsistent with Death Valley National Park's International Night Skies designation.

- Policy VIS-1.9: Economic Impacts from lost Visual Resources. The County shall balance Renewable Energy Solar Facility development opportunities with the potential loss of tourist based economic opportunities from impacts to visual resources.

<u>New Visual Resources or Economic Development Implementation Measure</u>

1. Work with applicants, economists, and visual resource experts to develop a standardized method to quantify economic impacts from lost visual resources due to Renewable Energy Solar Facility development to the County's tourist economy.

<u>New Recreation Implementation Measures</u>

1. Work with developers and other agencies to minimize impacts to recreational access resulting from Renewable Energy Solar Facility development.

2. Work with Renewable Energy Solar Facility developers to provide educational recreation opportunities based on renewable energy solar development.

Public Safety Element

New Air Quality Implementation Measure

1. Support appropriate efforts to combine air quality improvements with other social, cultural, and environmental goals, including Renewable Energy Solar Facility development.

New Noise Implementation Measure

1. Work with developers and other agencies to minimize noise from Renewable Energy Solar Facility development.

3.3.2 Solar Energy Development Areas

Overview

As part of the 2013 REGPA, the County has identified SEDAs that may be appropriate for renewable energy development exploration (see New Mineral and Energy Resources definitions and policies in Section 3.3.1 for the discussions of the SEDAs in the REGPA and refer to Figure 2-1 for the locations of the SEDAs in the County). The SEDAs are areas within which renewable solar energy development may be viable based on criteria developed within the confines of: (1) energy generation ability; (2) proximity to transmission; (3) the presence of biological and cultural attributes; (4) socio-economic factors; and (5) visual resources. It is also desirable that these areas be close enough to existing electrical conveyance corridors to export energy without the huge expense and environmental disruption of new transmission lines. These SEDAs are identified in order to direct potential developers of solar energy projects to areas that may be appropriate for development, and to direct developers away from areas that are not appropriate for such development.

Areas given special consideration as potential SEDAs include degraded lands such as brownfields, mines, landfills, and Owens Lake, and properties requested for consideration by property owners. These qualities also define the priority development areas within the SEDAs evaluated in this PEIR. Areas excluded from consideration include BLM ACECs and Wilderness Areas. Development within the SEDAs may be further refined based on information regarding cultural, historic, visual, socioeconomic and other resources and constraints contained within this PEIR and subsequent environmental studies. The criteria for establishing SEDAs and areas excluded from consideration are discussed in greater detail below.

The proposed SEDAs were identified based on the results of the work completed in 2011, the OCTS completed in 2014 for the REGPA (Aspen 2014; Appendix D), and the County Background Report, and were refined by public input. The OCTS utilized readily available spatial data to depict the County's renewable energy resource potential and analyzed the data in light of the criteria identified above. Areas identified in the OCTS as potentially appropriate were further reduced based on public comment. A total of eight SEDAs, are proposed to be included in the REGPA.

These SEDAs have been divided into solar energy groups for ease of presentation. As presented in Table 3-1, the Western Solar Energy Group is comprised of the Laws, Owens Lake, Rose Valley, and Pearsonville SEDAs; the Southern Solar Energy Group is comprised of the Trona SEDA; and the Eastern Solar Energy Group is comprised of the Chicago Valley, Charleston View, and Sandy Valley SEDAs. The OVSA is not within a SEDA and will be evaluated separately from the SEDAs with additional criteria, such as those identified for distributed generation, community scale and small scale facilities. The SEDAs have been identified as having the greatest energy generation ability while in proximity to electrical conveyance facilities, and having the least potential impact on known environmental resources. As outlined in the new Mineral and Energy Resources Policy MER-2.3, SEDA Land Inventory, the County will establish maximum generation capacity and developable area thresholds for each of the SEDAs.

Owens Valley Study Area

The results of the preliminary work done for the 2013 REGPA indicated concerns regarding development in the Owens Valley (referred to as the OVSA). Therefore, with the exception of the Laws SEDA which overlaps the Owens Valley, potential development within the OVSA is planned to be further explored more specifically through another planning process.

A separate set of potential criteria for development siting in the OVSA have been formulated: (1) only utilize existing transmission facilities and corridors; (2) guide the development to disturbed lands, including over and along the Los Angeles Aqueduct; (3) consider encouraging development at solid waste and wastewater treatment facilities, on private lands, in small scale (e.g., roof tops) and distributed generation (20 MW or less) arrays, and around communities in smaller arrays (10 MW or less); (4) mitigate potential impacts to the environment, society, culture, and economy of the County; (5) work to avoid significant alterations to visual resources; and (6) minimize intertie facilities.

3.3.3 Redevelopment of Previously Developed or Degraded Areas Within SEDAs

In accordance with the new Land Use Policy LU-1.17 and Land Use Implementation Measures 5 and 8, the proposed SEDA location and extent have been developed in part based on criteria listed here. The County will encourage development within the SEDAs on lands that have been previously developed or disturbed, property owner requests, and along existing transmission lines. Those criteria are described here.

Degraded Land

Degraded land is land that has previously been developed or disturbed in one form or another. This can include anything from abandoned housing to old mining sites. Degraded land can be a valuable asset for redevelopment, and depending on the specific conditions of the sites, is considered throughout many of the studies regarding renewable energy development, as land to consider for development.

Brownfields

The Rural Desert Southwest Brownfields Coalition (RDSBC) was established in 2011 and is made up of five counties: four from Nevada, Nye, Esmeralda, Lincoln, and White Pine; and, Inyo County, in California. The RDSBC Counties' work focused on opportunities for renewable energy development, energy efficient technologies, and other "clean economy" projects. Currently two properties have been identified in Inyo County for potential brownfield redevelopment and one is potentially appropriate for renewable energy development. The identified renewable energy development site is approximately100 acres of predominantly vacant land and is located on the west bank of Owens Lake (see the Owens Lake SEDA in the Western Solar Energy Group), approximately ten-miles south of Lone Pine. Originally, the site was used by PPG Industries Bartlett Plant (PPG) as a salt extraction facility, until it ceased operation in 1958. Redevelopment ideas for the PPG Plant site have included a renewable energy project. The RDSBC funding includes Phase I and Phase II assessments of the identified sites.

Abandoned Mines

There are numerous abandoned mine sites throughout Inyo County. Many of these sites are on BLM, National Forest and National Park lands. Abandoned mines and borrow pits sites within the SEDAs will be evaluated for development.

Landfills

Landfills within Inyo County were identified during the 2011 REGPA as places that may be appropriate for renewable energy development. They are located throughout the County and could be redeveloped as they become full, or in areas that are currently taken out of service. There are landfills that service, and are located, near each of the County's communities.

Owens Lake

Owens Lake is an approximately 110-square-mile dry lake bed that was historically the terminus of the Owens River. The Owens River and other area streams that fed Owens Lake were diverted by LADWP into the Los Angeles Aqueduct, which was completed in 1913. As a result of these water diversions, Owens Lake was predominately dry by 1930. The exposed lake bed became a major source of airborne dust in the Owens Valley. Due to the effects on air quality from the lake dust, the Great Basin Unified Air Pollution Control District mandated that the LADWP implement dust control measures. In 2009 LADWP announced that it would be pursuing a 550-kW PV solar demonstration project on a 5.3-acre area located within the 2.03-square mile Owens Lake Phase 8 dust mitigation area on the northwest section of the lake bed, south of Lone Pine. This area has been treated with gravel as part of the dust mitigation efforts. The LADWP completed a Mitigated Negative Declaration (2013) on the solar demonstration project. General construction subsequently began in mid-August 2014 and plans for project completion are set for early 2016. The demonstration project is being implemented to determine whether Owens Lake is a suitable location for larger-scale energy production.

Property Owner Requests

The County has included available and appropriate County land and land requested by individual property owners to be considered for development.

Properties within the Chicago Valley and Charleston View have been requested for consideration by the property owners, and the Laws SEDA contains properties owned by various agencies that have been identified as disturbed and are included in the SEDAs.

3.3.4 Scale and Distribution of Solar Developments

The new Land Use Policies LU-1.17 and LU-1.18 direct the scale of renewable energy development being considered in the County, and the distribution of those developments. The scale and distribution of solar developments in the County is summarized here.

Utility scale Renewable Energy Solar Facility

Utility scale facilities produce more than 20 MW of electricity for off-site use, consumption and/or sale. These large-scale solar developments will be considered within the SEDAs and along the Los Angeles Aqueduct, and can be within any zoning district under Title 18 of the Inyo County Code (ICC). Transmission and intertie facilities may be constructed and operated within any land use designation and any zoning district under ICC Title 18 and pursuant to ICC Title 21.

Distributed Generation Renewable Energy Solar Facility

Distributed generation facilities produce 20 MW or less of electricity for off-site use, consumption and/or sale. These solar developments will be considered within the SEDAs and along the Los Angeles Aqueduct within the OVSA, and in any zoning district under ICC Title 18. The intertie line, storage facilities, and related infrastructure may be constructed and operated within any land use designation and any zoning district under ICC Title 18 and pursuant to ICC Title 21.

Community scale Renewable Energy Solar Facility

Community scale facilities generate energy for a specific community's use and are located near the community they serve. These solar developments will be considered in or outside of the SEDAs and in any zoning district under ICC Title 18, and pursuant to ICC Title 21, but must be located near the community they serve.

Small scale Renewable Energy Solar Facility

Small scale facilities generate energy for on-site use such as roof-top or ground mounted PV panels. These solar developments are already allowed and will continue to be considered in or outside of the SEDAs and in any zoning district under ICC Title 18.

3.3.5 Transmission Planning

The potential to develop renewable energy resources in specific areas is dependent on sufficient transmission capacity that provides for adequate delivery of the generated energy. The SEDAs are located near to existing and planned regional electrical conveyance facilities so that future needs for additional capacity could be met by co-locating in already established utility rights-of-way with right-of-way availability.

Because the Inyo County load is small, large-scale renewable energy would serve loads outside of the County. Exporting energy would require the use of existing or upgraded transmission systems to deliver the energy. Renewable energy developers of large-scale projects could request transmission service from the SCE system, the LADWP system, or Nevada's VEA. LADWP has priority for use of its transmission system. For the SCE and LADWP systems, the transmission interconnection request would establish a queue position for each new project and initiate the study process that specifies the scope of the transmission upgrades necessary to serve the project. All systems would require substantial and costly upgrades in order to deliver large amounts of energy. Interconnection to the existing capacity on the existing LADWP 230-kV line and to the Valley Electric Association system would be the least costly. The upgrades would require a significant time to plan, permit, and construct.

In order to plan for solar development, the County conducted a transmission analysis to evaluate the available capacity on existing lines and identify where upgrades or additional lines would be necessary (Aspen 2014). Upgrading existing lines and construction of tie-ins to existing lines and new lines would result in additional land disturbance.

To determine the energy transmission capacity necessary, the County has capped the amount of energy (in MW) likely to be developed in each SEDA. As presented in the SEDA Table shown in Section 3.3.1, New Mineral and Energy Resources Policy MER-2.3, SEDA Land Inventory, each solar energy group and the SEDAs within that group have been assigned a cap for the total allowable energy capacity generated, and the corresponding maximum acreage of solar facility development. This inventory has been established to ensure adequate existing and planned transmission and distribution capacity of the existing transmission facilities. The transmission requirements for each solar energy group is presented below.

Solar Energy Group Transmission Requirements

Western Solar Energy Group

The Western Solar Energy Group is located along the LADWP transmission line through the Owens Valley, so all development in the Western Solar Energy Group would be reliant on the capacity of these existing facilities. According to LADWP, its transmission line has approximately 250 MW of available capacity. To avoid upgrades to the facilities, the total development in the Western Solar Energy Group cannot exceed the line's current capacity. Therefore, any combination of development in the Western Solar Energy Group, including the OVSA, cannot exceed 250 MW generation and 1,500 acres of development.

Southern Solar Energy Group

The Southern Solar Energy Group is comprised of the Trona SEDA and has a 100-MW energy generation cap. Exporting 100 MW from the Trona SEDA would require a new transmission line because there are no existing transmission lines in this area of the County; only lines providing distribution to local residences currently exists. This new line could parallel the existing 33-kV SCE distribution line and would most likely be built at 115 kV to interconnect with the existing SCE 115-kV line that runs along US 395 in Kern County.

Eastern Solar Energy Group

The Eastern Solar Energy Group is comprised of the Chicago Valley, Charleston View, and Sandy Valley SEDAs and has a 550-MW energy generation cap. Exporting energy from the Eastern Solar Energy Group would likely require a transmission interconnection into VEA facilities, already part of the California grid. As noted in Section 2.4.4.5, the Nevada Conceptual Renewable Energy Zone Transmission studied the area of Nevada that is just east of the state line for potential development, and concluded that up to 4,000 MW of solar energy could interconnect to a new Amargosa 500-kV substation at a cost of $13.2 million (2009 US dollars) and new Amargosa 230 kV substation at a cost of $12.8 million (2009 US dollars). New substations and transmission interconnections would be necessary to export the 550-MW from the Eastern Solar Energy Group which would require a longer interconnection and result in a cost increase from those estimated. Although this potential interconnection would extend beyond the physical boundaries of the Chicago Valley SEDA and into the State of Nevada, the potential implementation of this connection line is addressed in this PEIR.

3.3.6 Technologies and Development Processes

This section presents background information on the characteristics of solar energy facilities and transmission infrastructure that would be required to support them and the processes that would be employed for their permitting, construction, operation, and decommissioning.

3.3.6.1 Solar Energy Generation Technologies

The solar technologies that would potentially be constructed within the SEDAs in accordance with the REGPA include solar PV and solar thermal technologies. Both technologies involve converting sunlight into electricity – the solar PV process is a direct conversion, and the solar thermal process uses a generator.

Table 3-2 provides a summary of siting and the assumed land and water use requirements, and the potential sizes of the developments. Each technology is described in detail in the following paragraphs.

Table 3-2
SUMMARY OF RENEWABLE ENERGY TECHNOLOGIES AND REQUIREMENT ASSUMPTIONS

Technology	Siting Requirements	Land Use Requirements	Water Use (Operation)	Water Use (Construction)	Potential Size
Solar Photovoltaic	Insolation Slope – varies depending on development size (less than 5 percent typical)	6 acres per MW	5 gallons per MW-hour	3 acre feet per MW	Roof-top or parking lot to several thousand acres 4 to 30 feet high
Solar Thermal	Insolation Slope – less than 3 percent	6 acres per MW	800 – 1,000 gallons per MW-hour	3 acre feet per MW	Generally greater than 500 acres (50 MW) 30 feet high (solar trough) to 100s of feet high (tower)

Source: Aspen 2014
MW = megawatts

Solar Photovoltaic Technology

Solar PV technologies convert sunlight directly into electricity by allowing solar photons to heat electrons from their ground state, producing a freed electron and a "hole" pair. The electron and the hole are then separated by an electric field within the PV cell and pulled toward positive and negative electrodes, generating direct current electricity. Multiple PV technologies are currently in use and under development, and the most widely developed PV technology is based on crystalline silicon cells and thin-film cells, including amorphous silicon and cadmium telluride.[1] Solar PV technology is suitable for all scales of solar energy development, ranging from small scale (e.g., roof-top mounted systems) to large, utility scale facilities.

A typical PV system includes the solar module to absorb and convert the sunlight into electricity, a solar inverter to convert the energy from DC electricity to alternating current electricity, an

1 Photovoltaic modules contain hazardous materials such as cadmium telluride. Cadmium telluride is a lung carcinogen and long-term exposure can cause detrimental effects to kidney and bone tissues. Photovoltaic modules do not fail the federal hazardous waste criteria for toxicity but may be hazardous waste by California standards. Since 2012, the Department of Toxic Substance Control (DTSC) has been drafting and revising potential regulatory language to address photovoltaic modules. After several public comment periods, the DTSC proposed to amend the CCR to designate both hazardous waste solar modules and non-hazardous waste solar modules as universal waste. The DTSC's goal is to limit the number of modules in California's landfills by managing the waste stream and recycling activities of solar modules. The Office of Administrative Law disapproved the proposed regulations in October 2013. No further update regarding the status of photovoltaic modules is available at this time: see Proposed Regulations: Proposed Standards for the Management of Hazardous Waste Solar Modules.

energy storage facility, and a transformer to boost voltage for feeding into the power grid. A cooling system may be required to abate excess heat, which may be passive (e.g., cooling fins) or active (e.g., forced air cooling or water cooling). The PV module includes several PV cells wired together and encapsulated. To produce electricity at a utility scale, individual PV modules are combined into solar panels, which are connected electrically into a PV array. PV projects can be mounted on existing structures such as rooftops or parking structures or can be ground mounted (e.g., free standing). Ground-mounted solar PV projects can use a fixed-tilt or tracking structure which can range between 4 and 30 feet in height depending on the technology used. Power-conducting cables are used to interconnect the PV array, or solar field, with the control building and the electrical substation. These may be installed underground, where the soil mantle permits; however, where trenching is not possible, the cables may be suspended in overhead cable trays. Refer to Figure 3-1 for photographs of typical ground-mounted solar PV system.

Larger solar PV projects would typically require an area with a slope of under 5 percent, although some technologies can accommodate greater slopes and small projects can be built on very steep slopes if necessary. Slopes must face south or southeast to be appropriate for siting in North America. A PV development would typically require approximately 6 acres per MW of energy produced. Solar PV systems do not require water during operations other than for panel washing which is minimal, less than 5 gallons per MWh.

Solar Thermal Technology

Solar thermal technologies use mirrors or lenses to focus sunlight onto a receiver that contains a heat transfer fluid such as oils, molten salt, or water. This fluid transfers the thermal energy to a heat engine that drives an electrical generator. Solar thermal facilities may include thermal energy storage whereby excess heat generated is stored in a thermal storage medium (typically molten salt). There are multiple types of solar thermal technologies. These technologies can be developed for distributed generation, although the majority of the solar thermal projects proposed in California have been at a utility scale. Developers in California are constructing and operating solar trough and solar power tower projects.

Additional technologies such as the compact linear Fresnel reflector system[2] and dish concentrators[3] have been proposed in California in the past, but are no longer being commercially pursued as of 2013.

Typical utility scale solar trough facilities include the solar field, power block, cooling system (cooling water and steam water support systems, including wells, pipelines, filtration, chemical treatment equipment, blowdown and evaporation ponds, zero-discharge facilities, and pumping

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[2] A compact linear Fresnel reflecting system uses long rectangular mirrors that reflect the sunlight on the receiver tube. In a linear Fresnel system, several mirrors share a receiver positioned above the mirrors which allow the mirrors greater mobility in tracking the sun and may lessen overall costs (NREL 2012).

[3] A dish/engine system uses a mirrored dish similar to a large satellite dish that directs and concentrates sunlight onto a thermal receiver above the dish that collects the heat and transfers it to the engine generator. The most common type of heat engine is the Stirling engine (NREL 2012).

stations), electrical switchyard and power conditioning facility, thermal energy storage facilities (when present), and various support buildings (control building, warehouse, and maintenance facilities). The solar field consists of long rows (approximately 100 to 150 feet long) of curved, mirrored troughs that focus the sun's energy on a central absorber tube containing a heat transfer fluid (typically a mix of synthetic and organic oils). The heat transfer fluid is heated and flows to a power block, where its heat is transferred to steam via a heat exchanger and the steam is used to produce electricity using a steam turbine generator. The trough is parabolic along one access, and maximizes the solar energy collected by using a tracking system to adjust the trough angles along the single access to follow the movement of the sun. The receiver may be enclosed in a glass vacuum chamber to reduce convective heat loss. Refer to Figure 3-2 for photographs of a typical solar trough facility.

Utility scale solar power tower facilities use an array of hundreds to thousands of tracking flat mirrors (heliostats) to focus sunlight onto a fixed central receiver at the top of the tower. The focused sunlight superheats a heat transfer fluid (typically water or molten salt), which is then converted to steam to power a steam turbine generator to produce electricity. Like the solar trough facilities, the heliostats utilize a tracking system to position the heliostats to follow the daily movement of the sun. Power tower systems use power blocks, cooling systems, and other major components and facilities similar to the solar trough facilities. The height of the towers can range from approximately 150 to 750 feet tall. The Ivanpah Solar Electric Generating System near Ivanpah in San Bernardino County, California is currently the world's largest solar thermal power tower facility, a 392-MW system with three 450-foot-tall towers and 173,500 heliostats. Refer to Figure 3-3 for photographs of a typical solar power tower facility.

A technical limitation for solar thermal technologies is the variety of slope requirements. Because the piping interconnecting the solar troughs has a very low tolerance for change in slope, the slope of lands for the solar troughs needs to be less than 2 percent (preferably less than 1 percent). The tower facilities may be constructed on terrain with slopes up to 3 percent. As with solar PV, solar thermal technologies require approximately 6 acres per MW of electricity generated. Solar thermal technologies can vary in height from 30 feet (solar trough) to hundreds of feet tall (solar power tower).

Solar thermal technologies require water consumption to run the cooling systems (both wet- and dry-cooled), mirror washing, and other maintenance and sanitary uses. Water consumed for wet-cooled solar thermal projects ranges from 800 to 1,000 gal/MWh. Most of the water is used for the cooling system, and the amount of water used depends on the cooling system. The use of dry-cooling or hybrid wet-dry cooling can reduce water by up to 97 percent based on system design and location.

3.3.6.2 Energy Storage

Energy storage devices store energy during periods of low demand and discharge this energy during periods of high demand. In order to improve the reliability of renewable energy in Inyo County, storage could be added to renewable energy development, such as solar thermal development, or included in addition to the renewable energy projects.

In October 2013, the CPUC established an energy storage target of 1,325 MW for PG&E, SCE, and SDG&E. As stated by the CPUC, the benefits of storage include optimizing the grid by reducing the peak load, contributing to reliability of the grid, or deferring transmission and distribution upgrade investments (see Section 4); aiding in the integration of renewable energy; and aiding to reduce the greenhouse gas emissions to 80 percent by 2050 per California's goals (CPUC 2013).

There are many types of energy storage products ranging from multiple types of battery storage to compressed air or pumped-storage hydropower. Batteries provide an uninterrupted supply of electricity and can also increase power quality and reliability. Lead-acid batteries are currently the standard battery type used in energy storage applications, but many other types of batteries are near commercial readiness (CEC 2013).

Compressed air energy storage uses pressurized air as an energy storage medium. An electric motor driven compressor pressurizes the storage reservoir using energy during off-peak or low-use times and then the air is released from the reservoir through a turbine during on-peak or high-use hours to produce energy (Energy Commission 2013d). Ideal locations for large compressed air energy storage reservoirs are empty aquifers, abandoned conventional hard rock mines, and abandoned hydraulically mined salt caverns (CEC 2013).

Pumped-storage includes storing energy by pumping water from a lower elevation reservoir to a higher elevation reservoir using pumps that run during off-peak times. During high electricity demand times, the stored water is released through turbines that produce electricity.

As previously mentioned, solar thermal technologies can have storage integrated into the system such that energy captured during the daytime can be used in the evening or when needed. Solar thermal technologies with over 7 hours of storage are operating in Spain (Andasol 1 and 2).

3.3.6.3 Transmission Infrastructure

The County is committed to minimizing the need for new or additional transmission infrastructure. As described in Section 3.3.4, development in the Western Solar Energy Group would tie-in to the existing LADWP transmission lines through the Owens Valley. Transmission lines would need to be constructed to tie-in to the existing lines. New transmission lines would be necessary to support solar development in the Southern Solar Energy Group, and tie-ins to a conceptual transmission line in western Nevada would be necessary to support solar development in the Eastern Solar Energy Group. The solar energy groups and the maximum allowed energy production from facilities constructed in those groups are based on the presence of existing lines and the available energy transmission capacity of those lines.

The lengths of the new transmission lines would depend on the distance from the site to the existing facilities identified previously. Based on general transmission line information contained in the BLM Solar PEIR (BLM et al. 2010), if transmission line construction is required to support solar facility development, such as in the Southern and Western Solar Energy Groups, the right-of-way width would likely be less than 250 feet. The construction footprint would correspond to a disturbed area of approximately 30 acres per mile of transmission line constructed. The voltage of transmission lines would depend on the output of the project being constructed. A transmission line rating of 500 kV is a predominant high voltage for transmission lines in the western states (BLM et al. 2010). Regardless, the lines would need to be compatible to the line to which it would connect, and the portion of the grid in which the facility is connected.

The construction of tie-in alignments for the Western and Eastern Solar Energy Groups and new transmission lines supporting solar development in the Southern Solar Energy Group would require new transmission poles and conductors to be installed. New access roads may need to be constructed where the pole site locations are not accessible from existing access roads.

Transmission towers are typically carried to the tower site by trucks in sections, and assembled in laydown areas, and erected with a crane. They may require one to four or more concrete foundations, depending on the structure and subsurface conditions. The electrical lines are typically installed using truck-mounted cable-pulling equipment. In steep and inaccessible conditions, helicopters may be used for tower transport and erection, and to install electrical lines. Based on the locations of the SEDAs and OVSA in close proximity to existing and potential transmission lines and the relatively flat terrain of the SEDAs and OVSA, it is not likely helicopters would be needed for tower and electrical line installation.

3.3.6.4 Development Process

Construction Activities and Methods

Site preparation and construction activities would be dependent on the technology being installed, the scale of the technology, and the location. Construction of any solar energy development project would typically involve: establishing site access; performing site grading; constructing staging areas, including laydown areas; removing vegetation from the solar field, and access roads, and transmission pole sites; installing permanent security fencing and temporary construction fencing; and constructing the solar field, power block area (for solar thermal technologies), central control building, maintenance and storage facilities; electrical substations; and meteorological towers. Depending on the foundation being used for the solar field, pile driving may be necessary. Construction would generally occur in two phases: (1) site preparation, which would be a relatively short duration and (2) facility construction, assembly, testing, and start-up, which would be considerably longer. The development may also be phased, either similar activities could be completed at the same time throughout the site (for example, all electrical equipment and substations could be installed at one time), or the project could be developed in units in which the units become fully functioning over a course of several years (for example, one array of PV panels in a multi-array development is constructed at a time and becomes fully operational before the entire development is complete). Both phases of construction would involve heavy equipment; however, the SEDAs are generally located along existing major roadways through the County and the heavy equipment for these activities would not be expected to pose transportation issues.

Future development under the REGPA would be designed to minimize ground disturbance to the extent practicable. Generally, this is accomplished by designing access roads to be as straight as possible, and constructing new ancillary facilities on the solar field site. However, while the areas for solar facilities are expected to be generally flat, access roads to the site or to transmission towers may be circuitous routes to meet grade requirements or to avoid sensitive habitats or other obstacles. All access roads, transmission tie-ins (or new transmission lines), off-site staging areas or ancillary facilities would be identified in the project limits for individual projects. All ground disturbance associated with the individual projects would be confined to the project limits identified for that project.

Site Preparation

Typical construction equipment used in the site preparation phase, which would involve establishing site access, constructing the staging areas, and performing site clearing and grading, would include bulldozers, graders, excavators, scrapers, front-end loaders, trucks, cranes, rock frills, chain saws, chippers, trenching machines, and equipment for blasting operations if required.

The site clearing involves removing vegetation from the locations of access roads, and the solar field area. Areas around control buildings, electrical substations and power block areas must be cleared and maintained free of vegetation throughout operation to eliminate fire and electrical safety hazards, and for access. In some cases, avoidance areas may be present, such as sensitive habitats and their buffers, and would need to be avoided. Some technologies are tolerant of vegetation establishing around or under the solar field components during operation, but would need to be removed during site construction. Certain ground-mounted solar PV systems have design qualities allowing them to be ground-mounted on relatively uneven surfaces and without clearing all vegetation (this may include geotextile fabric and/or precast concrete footings). BMPs for invasive species management and dust control would be implemented during construction activities. Controls regarding the disposition of biomass would be established on a site-specific basis. Areas maintained free of vegetation during operation would be treated with rock or gravel to ensure all-weather accessibility, proper drainage, and to reduce fugitive dust.

Surface soils may need to be excavated, and sand and/or gravel fills imported to establish a sufficiently stable road base. Removed topsoils would be stockpiled for subsequent use in site reclamation. Access roads (other than the primary access road) would be constructed to have all-weather capability, but would likely not be paved. Compacted gravel roads may cause fugitive dust problems in arid environments, so BMPs to mitigate road dust would be implemented and may include the application of soil palliatives.

Construction of transmission lines requires the establishment of tower assembly areas, laydown areas, and temporary roads.

Site Construction

Typical equipment used in the construction phase includes cranes, front-end loaders, backhoes, bulldozers, trucks, and may include a temporary concrete batching plant for foundations for solar power towers or power block structures. Site construction includes excavating foundation areas, and foundation installation, construction of the control/electrical building and power-block related structures (including cooling towers, water treatment facilities, and evaporation ponds), installing water tanks, electric substations, and trenching for power and signal cables. Permanent fencing would be installed around the perimeter of the entire project area, and high-hazard areas such as electrical substations may be enclosed with high security fencing. All perimeter fencing within desert tortoise habitat should be installed to prevent desert tortoises from entering the site. Temporary fencing or barricades may be erected during construction to prevent unauthorized entry of individuals or animals into active construction zones.

Most foundations required for permanent structures at solar facilities require only slab-on-grade foundations, constructed with standard construction methods and equipment. The structure weight of power towers require robust foundations that may require excavations to depths that depend on the subsurface conditions. Tower foundations may also require steel-reinforced concrete foundations that may extend to depths as great as 35 feet (BLM et al. 2010). Geotechnical surveys may be required to establish the foundation specifications. Excavated materials should be stockpiled and reapplied on site.

The additional construction activities would be performed using conventional construction methods. BMPs would be implemented to minimize fugitive dust as a result of construction activities and exposed soils. Temporary construction facilities would be removed when no longer required, and temporary construction areas would be reclaimed.

Operations

The scope of operations and number of on-site personnel would depend on the technology and capability of the solar facility. Operations include monitoring facilities and maintenance such as mirror washing and repairing or replacing equipment. The numbers of individuals could range from 1 to 100, depending on the facility size. Some solar facilities are able to be monitored remotely and do not require daily inspection. All facilities would require facility control staff to monitor the solar field, power block, and substation operations. Facilities only collecting solar energy would need monitoring only during daylight hours when the facility is in operation. Other facilities with thermal energy storage or energy generation sources would require monitoring whenever power is being generated.

PV systems generally require less frequent mirror washing than solar thermal systems, and at large facilities, mirror washing can be an on-going operation. Various equipment require regular maintenance and inspection, including electrical lines. The steam water and heat transfer fluid circulation in solar thermal facilities require steam turbines, pumps, and compressors which require regular maintenance, and require the use of lubricating fluids and cleaning agents. Spent lubricating oils, battery electrolytes, and coolants can be expected to be generated from the preventative maintenance of emergency and backup power systems. Steam cycles require continuous attention, including regular treatment of steam water to control total dissolved solids and prevent scale formation in the system components. Similar treatment of cooling water in recirculating closed-loop cooling systems would be required, and blowdown waters from the steam cycle and cooling system may be disposed of on-site or containerized for eventual transport to off-site treatment or disposal facilities.

Decommissioning/Reclamation

Decommissioning would commence pursuant to an approved project-specific decommissioning and reclamation plan. A separate hazardous materials plan would be prepared. Decommissioning activities include equipment, structure, and improvement (such as access roads) removal, proper closure of on-site wells, removal of all hazardous materials and wastes and closure of store areas in accordance with the hazardous materials plan, remediation of spills or leaks of hazardous materials that may occur during dismantling, closure of all off-site areas. The site would be reclaimed and revegetated to its native state to the greatest extent possible. Removed materials may be recycled in some instances, such as PV panels, batteries, gravel, and concrete. Disturbed areas would be adjusted for soil compaction, graded to the original grade, and reseeded or replanted with indigenous vegetation.

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4.0 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The main body of the PEIR consists of the environmental impact analysis defined by individual environmental issue areas (i.e., Sections 4.1 through 4.18).

This PEIR examines all of the environmental issues areas identified in Appendix G of the State CEQA Guidelines and through comments received on the NOP and public scoping meetings. Each environmental impact is addressed according to the following format:

- **Existing Conditions:** A discussion of the existing conditions and physical environment of the project area.
- **Regulatory Framework:** A discussion of the federal, state, and local regulations relevant to the proposed project.
- **Significance Thresholds:** A discussion of the thresholds of significance according to the State CEQA Guidelines (Appendix G).
- **Impact Analysis:** A discussion of the impacts of the proposed project in quantitative and/or qualititative terms, based on the uses of land identified in the project description. Impacts are analyzed according to the State CEQA Guidelines (Appendix G) as follows: significant and unavoidable; significant, but can be mitigated, avoided, or substantially lessened; less than significant; or, no impact.
- **Level of Significance Before Mitigation:** A discussion of the level of impacts prior to implementing measures to avoid, minimize, or mitigate for those impacts.
- **Mitigation Measures:** A discussion of the measure required to avoid, minimize, or mitigate significant impacts to below a level of significance.
- **Significant and Unavoidable Adverse Impacts:** A discussion of impacts unable to be reduced to below a level of significance following mitigation.

Areas of Potential Environmental Impact

1. Aesthetics
2. Agricultural Resources
3. Air Quality
4. Biological Resources
5. Cultural Resources
6. Geology/Soils
7. Greenhouse Gas
8. Hazards and Hazardous Materials
9. Hydrology and Water Quality

10. Land Use and Planning
11. Mineral Resources
12. Noise
13. Population and Housing
14. Public Services
15. Recreation
16. Socioeconomics
17. Transportation and Circulation
18. Utilities and Service Systems

4.1 AESTHETICS

4.1.1 Existing Conditions

4.1.1.1 Overview of Visual Resources Concepts

Aesthetic/visual resources are defined as the natural and man-made elements and features of the landscape that contribute to the visual character and quality of a setting. Because a viewer observes the visual environment as a whole and not one object at a time, the viewer's perception of that environment is based on the visual character of objects and the relationships between them. Visual character is descriptive and non-evaluative; it is the order and combination of patterns that are created by visual elements in a scene. The fundamental pattern elements used to describe visual character are form (in terms of bulk, mass, size, and shape), line, color, and texture, and the appearance of a landscape is described according to the dominance of these elements.

Visual quality is evaluated according to the vividness, intactness, and unity present in the viewshed. These criteria for evaluating visual quality can be defined as follows:

- **Vividness** is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and man-made landscape and its freedom from encroaching elements.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole.

An individual's perception and enjoyment of a view can vary with each individual. The visual experience of the viewer is a combination of the visual resources in the landscape and the viewer's response to what is seen. Viewer response, or awareness, is composed of two elements: viewer sensitivity and viewer exposure. Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. Viewer exposure is the degree to which viewers are exposed to a view or visual resource. Viewer exposure varies based on the physical location of the viewer and the distance and position of the viewer in relation to the resource, the number of viewers of the resource, and the duration and frequency of the view. A viewer's response is also affected by the degree to which he/she is receptive to the visual details, character, and quality of the surrounding landscape.

4.1.1.2 Regional Visual Setting

The County encompasses approximately 6.5 million acres of land on the east side of the Sierra Nevada and consists of vast areas of designated wilderness and recreation areas within a high desert and mountainous setting. While it is the second largest county in California, it has a population of only 18,456 (Census 2010) residing in small towns and one incorporated city (Bishop). Most residents are located on the western side of the County in small communities along US 395, and other small towns are scattered throughout the County. Much of the County remains undeveloped open space. Because of its low population in comparison to its large land area and federal and wilderness lands, the character of the County is rural.

Inyo County contains abundant and diverse natural resources and scenic visual elements that are the prime contributor to the visual environment of the County. The County contains the highest point in the continental United States at Mount Whitney (14,505 feet amsl) and the lowest point in the US at Badwater Basin in Death Valley (282 feet below mean sea level). The County contains portions of the Sierra Nevada; Owens Valley; Death Valley National Park; numerous water bodies, valleys, and mountain ranges; forest land within the Inyo National Forest; historic sites; ranches; agriculture areas; and volcanic outcrops and volcanic cones.

The Sierra Nevada provides a prominent consistent visual backdrop along the western edge of the County with their utter dominance and steep granitic peaks that comprise western horizon views. The jagged and often snow-capped peaks and forested slopes emerge from and contrast with the floor of Owens Valley to the east. Owens Valley is a long north-south trending valley that lies between the Sierra Nevada and the Inyo Mountains, and contains creeks and riparian areas, broad grasslands, US 395, and small rural towns along US 395. The Inyo and White Mountains form a division between Owens Valley to the west and Death Valley to the east. Death Valley and the surrounding Panamint and Eureka Valleys, on the eastern edge of the County, contain diverse and stark desert features and landforms, and the smaller valleys in the southeastern portion of the County comprise a more uniform high desert setting. Death Valley National Park, the largest national park in the continental U.S., occupies a large area of the County and contains a diverse desert environment of salt flats, sand dunes, badlands, valleys, canyons, and mountains.

The China Lake NAWS is partially located within the southwestern portion of the County. China Lake NAWS encompasses more than 1 million acres across three counties—Inyo, Kern, and San Bernardino—and is a land range and weapons development laboratory for the Department of the Navy. Approximately 95 percent of the land within China Lake NAWS remains undeveloped.

Inyo County also has an abundance of cultural and historical resources that contribute to the County's scenic value and visual environment. The Paiute and Shoshone people occupied the area before Euro-American settlement, and tribes remain within the County, including on tribal land. Burial grounds, artifacts, petroglyphs, and landscapes with cultural significance occur throughout the County. Historical resources from early Euro-American settlers such as mining, ranching, and railroad artifacts, as well as old cabins and buildings are also present.

Together, these numerous natural and visual resources provide distinct, quality scenic visual experiences while traveling through the County.

4.1.1.3 Project Area Visual Setting

Western Solar Energy Group

<u>Laws Solar Energy Development Area</u>

The Laws SEDA is located at the northern County boundary, northeast of Bishop and bisected by US 6. This SEDA encompasses approximately 11,655 acres (18 square miles) with the majority of land publically owned and managed primarily by the BLM and the City of Los Angeles. The Laws SEDA is characterized by the small industrial community of Laws, agricultural uses along US 6, Owens River, and undeveloped land. The community of Laws is centered on the main square that features the historic Laws railroad depot and associated buildings. To the north, pastoral agricultural fields line the east side of US 6 and the Owens River winds along the west side of highway. The Laws SEDA is characterized by relatively flat terrain and expansive views of the White Mountains and White Mountain peak at 14,252 feet amsl are available to the east. Distant expansive views of the eastern Sierra escarpment to the west are also provided from within this SEDA.

<u>Owens Lake Solar Energy Development Area</u>

The Owens Lake SEDA encompasses approximately 89,247 acres (139 square miles) and is located in and around Owens Lake generally bounded by SR 136 on the north, SR 190 on the east, and US 395 on the west. The most prominent visual feature within this SEDA is Owens Dry Lake, which is a large salt flat that is mostly a dry lake bed. Although large portions of the lake have been re-engineered to minimize dust emissions, many areas of the lake bed contains clay, sand, and a variety of minerals that form an expansive, flat, predominantly white-colored surface that creates a dramatic landscape in stark contrast with the surrounding desert setting against the backdrop of mountain ranges. Other colors within the lake bed are visible during certain times of the year when water levels are higher forming standing water or muddy brine that introduces blue and brown hues into the viewscape, and when halophilic (i.e., salt favoring) microorganisms spread across the lake bed producing a bright pink color. Marshes and wetlands occur along the lake bed shores and provide habitat for hundreds of avian species.

Because of the relatively level topography, expansive views to surrounding mountain ranges and prominent peaks are provided from within the SEDA. As within most areas of the County, the Sierra escarpment is highly visible to the west, with Mount Whitney and Olancha Peak (12,132 feet) as the dominant features from Owens Lake. To the east, the Inyo Mountains and Panamint Mountains are visible. Telescope Peak, the highest point within Death Valley National Park at 11,049 feet in the Panamint Mountains, can be been seen to the southeast. To the immediate south and southwest, the Olancha Dunes, Coso Mountain range, and Coso Peak (8,160 feet amsl) are visible.

The unincorporated community of Keeler is located within the Owens Lake SEDA. Keeler is located on the eastern shore of Owens Lake off SR 136 and is primarily a rural residential community with some industrial uses, but historically served as a supply center for the nearby Cerro Gordo mines and a railroad station. The old train depot building is located in the center of the town. Two other communities are located adjacent to the SEDA, including Cartago and

Olancha. Cartago is located along US 395 on the south shore of Owens Lake. This small town primarily consists of rural residential uses on both sides of the highway. A former soda ash plant is also located in the eastern part of town and evaporation ponds and mounds of white material remain visible. Olancha is one of the larger communities within the County and is located along US 395 just south of Cartago. The town contains a mixture of rural residential, light industrial, commercial, and agricultural uses. Residences, warehouses and industrial structures, roadside businesses, and agricultural fields are visible from US 395.

Rose Valley Solar Energy Development Area

The Rose Valley SEDA encompasses approximately 24,198 acres (38 square miles) and is generally a linear area along the US 395 corridor. The Rose Valley SEDA consists mostly of undeveloped land, designated as BLM grazing allotment. Some agricultural uses and the Haiwee Hydro Electric Power Plant are located in the eastern portion of the SEDA. Small parcels of development occur along US 395, most consisting of a few residential lots, a highway rest stop, and/or small isolated industrial buildings, with scrap on the property. The Los Angeles Aqueduct also traverses the Rose Valley SEDA, from the northwest portion in a southeasterly direction.

Views of surrounding mountain ranges are similar to those described above for the Owens Lake SEDA. The Sierra escarpment is visible to the west, and the Coso Range and Panamint Mountains are visible to the east. In the northern portion of the SEDA, views of Olancha Dunes and Owens Lake are provided. To the immediate east, North Haiwee Reservoir and South Haiwee Reservoir are large water features within the otherwise desert landscape. At the south end of the SEDA, views of Red Hill can be seen from US 395, which is a basaltic cinder cone in the Coso Volcanic field near Fossil Falls. This is a dominant visual feature due to its contrasting landform in line, texture, and color compared to the surrounding desert elements. Red Hill, as its moniker indicates, is reddish in color with a smooth rounded landform that is disparate with the predominantly desert earth tones and jagged rough landforms of other visible hills and mountains in the landscape.

Pearsonville Solar Energy Development Area

The Pearsonville SEDA is located along the southwestern County boundary and encompasses approximately 4,469 acres (7 square miles). The SEDA consists almost entirely of undeveloped land with US 395 traversing the SEDA in north-south direction. The small community of Pearsonville is located in the southern area of the SEDA just east of the highway, and consists of a gas station, some scattered rural residences, automotive-related repair businesses, and large automotive scrap yards.

Views of surrounding mountain ranges and peaks are provided within this SEDA given the relatively flat desert terrain. The Sierra escarpment dominates views to the west, with Chimney Peak (7,871 feet amsl) being the closest tall Sierra summit to the SEDA. Near the northern portion of the SEDA, lava rock formations are located on the east side of US 395. These formations provide a strong linear form with a relief-like texture that visually stands out against the archetypal elements and colors of the desert landscape.

Owens Valley Study Area

The OVSA covers a large area of approximately 355,131 acres (555 square miles) that extends from the northern County boundary to north of Owens Lake. Most of the population centers within the County occur along US 395 within the OVSA , including Lone Pine, Independence, Big Pine, and Bishop, with other, smaller communities located further off of US 395 such as Wilkerson, Aberdeen, Black Rock, and Dolomite. These developed towns contain a mixture of commercial and residential uses along with ornamental landscaping that contrast with the surrounding open desert environment.

The valley floor provides a large contiguous topographically level area of open and generally unobstructed views across the valley. Natural vegetation consists of desert scrub that adds a fairly uniform, low-lying cover to the tan-colored valley floor. Owens River is the major water course in Owens Valley and snakes south through the valley. West of the community of Aberdeen, the river has been entirely diverted into the Los Angeles Aqueduct, although some of the flows have been restored back to Owens Lake. The river corridor provides verdant vegetation that contrasts with the surrounding valley floor in both color and form; it provides more vertical elements than the horizontal features of low-lying scrub and relatively level terrain of the valley floor.

The OVSA also contains agricultural fields just south of Big Pine, east of US 395, and south of Bishop, west of US 395. Other distinctive visual features include the Alabama Hills located west of Lone Pine that consist of weathered granite formations of boulders and pinnacles; various water bodies, including the Tinemaha Reservoir, Calvert Lake, Twin Lakes, and Diaz Lake; and surrounding mountain ranges that frame the valley, including the eastern Sierra to the west and the White/Inyo Mountains to the east. These prominent mountain ranges are dominant vertical elements that substantially contrast with the flat valley floor.

In addition, the Manzanar National Historic Site is located off of US 395 between Lone Pine and Independence and contains an interpretive center, reconstructed buildings, and watch towers of the former internment camp.

Southern Solar Energy Group

Trona Solar Energy Development Area

The Trona SEDA encompasses approximately 4,550 acres (7 square miles) and is located along the south-central County border and bisected by Trona Wildrose Road. Most of the Trona SEDA is undeveloped land characterized by relatively level topography. It lies within a valley bounded by the Argus Mountains to the west (that reach approximately 9,000 feet amsl) and the Slate Mountains to the east (that reach approximately 5,000 feet amsl). Developed features within this area include the Trona Airport, scattered rural residences, and scrap yards. Just north of the airport is Valley Wells, a California historical landmark, which consists of a few small buildings, abandoned recreational facilities, a desert golf course, and a large well field.

A potential off-site transmission corridor has been identified for the Trona SEDA, and would likely extend along SR 178 to an existing transmission line located along US 395 near the

City of Ridgecrest (in Kern County). This corridor includes mostly moderate to level topography, although some more rugged terrain is also present.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The Chicago Valley SEDA encompasses approximately 1,551 acres (2 square miles) and is located east of SR 178 in the southeastern portion of the County. The land is undeveloped except for a small trailer park and a few scattered homes along Chicago Valley Road. Topography within the valley is relatively level and is characterized by vast expanses of tan-colored soil with low-lying green scrub to create a stark homogenous desert landscape. Because of the flat topography, views of surrounding mountain ranges are available to the west and east. The Nopah Range (that reaches approximately 6,400 feet amsl) is located to the east and the Resting Spring Range (that reaches approximately 4,000 feet amsl) is located to the west.

A potential off-site transmission corridor has been identified for the Chicago Valley SEDA, and extends generally east-northeast from the SEDA to an existing transmission line located along SR 160 in Nevada. This corridor has similar visual conditions as the Chicago Valley SEDA and includes rugged terrain in the Nopah Range and generally moderate to level topography in other area.

Charleston View Solar Energy Development Area

The Charleston View SEDA is located in the in Pahrump Valley in southeastern portion of the County at the California – Nevada border and encompasses approximately is 39,697 acres (62 square miles). The SEDA consists of undeveloped land along with a few rural residences in the small community of Charleston View. The St. Therese Mission was recently constructed in this area and includes a church and cemetery with mission style buildings and red roofs that visually contrast with the older buildings and trailers that are scattered throughout the area. Tecopa Road, which is the major east-west roadway in Charleston View, generally follows the historic Old Spanish Trail route that once connected Los Angeles with New Mexico as a major trade route. The relatively level valley floor provides expansive views across the valley to surrounding mountains ranges and prominent peaks, including the Nopah Range to the west and the Spring Mountains featuring Charleston Peak (at 11,916 feet amsl) in Nevada to the east.

A potential off-site transmission corridor has also been identified for the Charleston View SEDA, and extends generally northeast from the eastern SEDA boundary along Tecopa Road to an existing transmission line located along US 160 in Nevada. This corridor includes generally similar visual conditions as the Charleston View SEDA, with generally level terrain and views to surrounding mountains.

Sandy Valley Solar Energy Development Area

The Sandy Valley SEDA encompasses approximately 3,097 acres (5 square miles) at the southeastern corner of the County boundary and abuts the California/Nevada state line. The SEDA contains primarily undeveloped land and agricultural uses. Large, circular agricultural fields and smaller rectangular fields occur within the western and southern portions of the SEDA along with scattered residences and ancillary buildings associated with the agricultural uses. Views of surrounding mountains are provided to the west and east and include the Kingston Range and Nopah Range to the west and the Spring Mountains to the north and east.

Viewer Groups

Viewer groups who potentially would have views of future solar energy developments within the SEDAs and the OVSA include motorists, recreationalists, and residents. Motorists would constitute the largest viewer group due to the transportation corridors that traverse the County. US 395, the primary transportation corridor within the County, extends in a north-south alignment in the western portion of the County and serves the small towns along the highway where most of the County's population is concentrated. US 395 runs adjacent to and/or through four SEDAs (Laws, Owens Lake, Rose Valley, and Pearsonville) and the OVSA. Other highways and local roadways provide access to the remaining four SEDAs in the southern and southeastern areas of the County. Motorists typically have a low sensitivity to visual changes in the environment because of their limited exposure due to short view durations afforded by traveling along a linear roadway and their focus on the roadway. However, given the numerous scenic resources and view corridors within the County and breadth of views available to such resources, motorists within the County can be expected to have a higher than normal sensitivity to changes in the visual environment.

The County contains numerous recreational and destination areas within its vast inventory of natural resources, wilderness areas, historic places, and forest land. Death Valley National Park, Mount Whitney, and the eastern Sierras are probably the most notable of these recreational resources, but there are numerous hiking/biking trails that are well-traveled, several lakes and rivers, and other recreational features (e.g., sand dunes, campgrounds, and off-highway vehicle [OHV] parks) that provide recreation for County visitors and residents. Users of these recreational resources comprise a large viewer group. Recreationists have a high view exposure given the angle of their view to visual resources (many recreational areas are at higher elevations that provide panoramic and/or birds eye views, and some are at low elevations that provide upward expansive views of visual features) and slower speeds or static vantage points (at stationary view locations that allow for a long view duration). As a result, the viewer sensitivity to changes within the visual environment for recreationalists is expected to be high.

Residents within the various towns concentrated along US 395 and scattered throughout other areas of the County also represent a viewer group. While views from private residences are not typically analyzed under CEQA, local residents would potentially be exposed to views of future solar development projects within the SEDAs from public viewpoints in relative close proximity to their homes from the transition of their driveway or private roadway to public roadways. In general, residents are provided long-term, stationary views and would have a high view exposure and sensitivity to changes within the existing visual environment.

4.1.1.4 Regulatory Framework

The proposed project is subject to a number of regulations applicable to the protection of visual resources, as well as plans and policies that ensure adequate consideration is given to preserving and/or enhancing the visual qualities of an area.

Federal Regulations

Most of the land within Inyo County is held in the public trust and managed by public agencies with approximately 92 percent managed by federal agencies, including the NPS, the BLM, USFS, DOD, and the Bureau of Indian Affairs (BIA). Tribal reservations/lands within the BIA areas include those belonging to the Bishop Paiute Tribe, Big Pine Paiute Tribe of the Owens Valley, Fort Independence Community of Paiute, Lone Pine Paiute Shoshone Reservation, and the Timbisha Shoshone Tribe. The following discusses the relevant federal agencies that manage visual resources within the County and their associated visual resource management programs and policies.

<u>Bureau of Land Management</u>

Visual Resource Management System

The BLM is responsible for ensuring that the scenic values of BLM-administered public lands are considered before allowing uses that may have negative visual impacts. BLM accomplishes this through its Visual Resource Management (VRM) system. The VRM system includes a systematic process for inventorying scenic values on BLM-administered lands and establishing visual resource management objectives for those values. The primary components of BLM's VRM system include visual resource inventory (VRI) and VRM class designation. The VRI process provides BLM with a means to rate the visual appeal of a tract of land, measure public concern for scenic quality, and determine whether the tract of land is visible from travel routes or observation points. On the basis of the results, BLM-administered lands are placed into one of four visual resource inventory classes that represent the relative value of the visual resources. Classes I and II are the most valued, Class III represents a moderate value, and Class IV represents the least relative value. Class I is reserved for specially designated areas, such as national wildernesses and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape. Class II is the highest rating for lands without special designation. BLM lands within Inyo County have been inventoried and classified for their visual resource sensitivity using BLM's VRI process and are identified within the Bishop Resource Management Plan for Inyo County. The locations assigned VRM classifications on BLM lands are shown on Figure 4.1-1 and the management objectives of each class are defined below:

- Class I objective is to preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but must not attract the attention of the casual observer. Changes must repeat the basic elements of form, line, color, and texture found in the predominant natural landscape features.
- Class III objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes

should repeat the basic elements of form, line, color, and texture found in the predominant natural landscape features.

- Class IV objective is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

National Scenic Byways Program

BLM also administers the National Back Country Byways Program, which is a component of the National Scenic Byways Program. The BLM currently manages 54 BLM-designated National Back Country Byways totaling approximately 2,952 miles in 11 western states. BLM-designated Byways within Inyo County include the Saline Valley Road Back Country Byway and the Owens Valley – Death Valley Scenic Byway. The Saline Valley Road Back Country Byway extends approximately 82 miles from its junction with SR 190 and continues north through Death Valley National Park to Death Valley Road near Big Pine. This Type II byway (generally unpaved roads that require high clearance or four-wheel drive vehicles) traverses the Saline Valley within Death Valley National Park and provides views of a salt marsh, a variety of wildlife and plants against the backdrop of desert landscapes. The Owens Valley – Death Valley Scenic Byway is a Type II byway that extends approximately 63 miles along Death Valley Road between SR 168 east of Big Pine to the northern entrance of Death Valley National Park.

<u>National Park Service</u>

The NPS Organic Act of 1916 established the NPS with the purpose "to conserve the scenery and the natural and historic objects and the wild life therein to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." NPS lands are designated and considered visually sensitive resources. NPS manages Death Valley National Park that occupies a large area of land in the eastern portion of the County, as well as the Manzanar National Historic Site located off US 395 between Lone Pine and Independence.

<u>United States Forest Service</u>

Scenery Management System

The USFS' Scenery Management System provides a methodology to inventory, manage, and monitor visual and scenic resources on National Forest System land. The goal of the USFS Scenery Management System is to manage National Forest System lands to attain the highest possible visual quality of landscape aesthetics and scenery for the public in perpetuity, commensurate with other appropriate public uses, costs, and benefits. The Scenery Management System uses "Theme, Setting, Desired Condition, Program Emphasis, and Scenic Integrity Objectives" to evaluate, manage, and monitor visual resources, landscape aesthetics, and scenery on National Forest Service lands. Desired Condition expresses the highest quality goal for a given landscape. A Scenic Integrity Objective defines the minimum level of visual quality to which any National Forest landscape should be subjected, in other words, the minimum acceptable standard for visual quality for an area. Scenic Integrity Objective classifications are defined as:

- Very High: Landscapes where the valued landscape character "is" intact with only minute if any visual deviations. The existing landscape character is expressed at the highest possible level.

- High: Landscapes where the valued landscape character "appears" intact. Visual deviations (human-made structures) may be present, but must repeat the form, line, color, texture, and pattern common to the landscape character so completely and at such a scale that they are not evident.

- Moderate: Landscapes where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

- Low: Landscapes where the valued landscape character "appears moderately altered." Visual deviations (human-made structures) begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.

- Very Low: Landscapes where the valued landscape character "appears heavily altered." Visual deviations (human-made structures) may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles within or outside the landscape being viewed. However, visual deviations (human-made structures) must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.

National Forest Scenic Byway System

The National Forest Scenic Byway system, created in 1987, is administered by the USFS and consists of 138 National Forest Byways. The goal of the National Forest Scenic Byway system is to enhance rural community tourism by providing access to scenic and historic viewpoints. National Forest Scenic Byways within Inyo County include White Mountain Road and SR 168 (Bishop Creek South Fork and Middle Fork). White Mountain Road is part of the Ancient Bristlecone Scenic Byway and extends from SR 168 on the outskirts of Bishop and climbs through pinyon-juniper woodlands in the Inyo National Forest. SR 168 extends west of Bishop along Bishop Creek and through the Inyo National Forest.

Wilderness Areas

In 1964, Congress established the National Wilderness Preservation System and passed the Wilderness Act to provide long-term protection and conservation of federal public lands. Wilderness is defined as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Wilderness Areas are designated by Congress and, since the passage of the Wilderness Act, more than 680 Wilderness Areas have been designated. These areas total over 106 million areas in 44 states (BLM 2014). Much of the land in Inyo County is designated as Wilderness Areas with an approximate total of 6,300 square miles that comprises approximately 61 percent of the County's total land area. Wilderness Areas are managed by four federal agencies, including the USFS, NPS, BLM and USFWS. Designated Wilderness Areas are located near the SEDAs and the OVSA, as identified in Table 4.1-1.

Table 4.1-1
DESIGNATED WILDERNESS AREAS NEAR THE SEDAS AND THE OWENS VALLEY STUDY AREA

Location	Designated Wilderness Area
Western Solar Energy Group	
Laws SEDA	White Mountains to the east
Owens Lake SEDA	Inyo Mountains to the northeast Malpais Mesa to the east Coso Range to the southeast Golden Trout to the west
Rose Valley SEDA	South Sierra to the west Sacatar Trail to the west Coso Range to the east
Pearsonville SEDA	Owens Peak to the west Sacatar Trail to the northwest
Owens Valley Study Area	White Mountains to the east Inyo Mountains to the east John Muir to the west
Southern Solar Energy Group	
Trona SEDA	Argus Range to the north
Eastern Solar Energy Group	
Charleston View SEDA	Nopah Range to the west Pahrump Valley to the south
Chicago Valley SEDA	Nopah Range to the east Resting Spring to the north
Sandy Valley SEDA	Pahrump Valley to the west

SEDA(S) = Solar Energy Development Area(s)

State Regulations

The California Scenic Highway Program was created in 1963 by legislature to "protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment." The California Scenic Highway Program includes highways designated by the California Department of Transportation (Caltrans) as scenic. The designation of a scenic highway depends on several factors, including the breadth of the landscape that is visible by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon a traveler's enjoyment of the view. The scenic highway designation applies to a specific corridor of the designated highway. The designation provides benefits to scenic resources along the highway, some of which include protection from incompatible uses, mitigation of activities within the designated corridor that detract from the highway's scenic quality, and preservation of hillsides. There are three officially designated state scenic highways in Inyo County, including portions of US 395, SR 168 and SR 190. A 20-mile segment of US 395 between Fort Independence and Fish Springs Road cuts through the Owens River Valley with the mountain ridges of the Eastern Sierras as a backdrop to the west. The 16-mile segment of SR 168 west of Bishop from Camp Sabrina to Brockman Lane is also a designated state scenic highway. SR 190 extends 82 miles through Death Valley National Park and provides views of a desert setting that contrasts the lowest elevation in North America with the mountain ridges along the valley.

Local Regulations

<u>Inyo County General Plan</u>

Visual resources are addressed within the Conservation/Open Space, Circulation, and Land Use Elements of the General Plan (2001, as amended). Section 8.8, Visual Resources, of the Conservation/Open Space Element contains the following goals and policies to protect visual resources within the County:

- Goal VIS-1: Preserve and protect resources throughout the County that contribute to a unique visual experience for visitors and quality of life for County residents.

- Policy VIS-1.1: Historic Character. The County shall preserve and maintain the historic character of communities within the County.

- Policy VIS-1.2: Community Design. The County will encourage and assist in the establishment and maintenance of design themes within existing communities.

- Policy VIS-1.3: Grading Impacts. Man-made slopes should be treated to reflect natural hillside conditions in the surrounding area.

- Policy VIS-1.4: Equipment Screening. Within communities, building equipment shall be screened from public view.

- Policy VIS-1.5: Outdoor Advertising. Outdoor advertising shall promote business in a manner that does not significantly degrade natural and community visual resources.

- Policy VIS-1.6: Control of Light and Glare. The County shall require that all outdoor light fixtures including street lighting, externally illuminated signs, advertising displays, and billboards use low-energy, shielded light fixtures which direct light downward (i.e., lighting shall not emit higher than a horizontal level) and which are fully shielded. Where public safety would not be compromised, the County shall encourage the use of low-pressure sodium lighting for all outdoor light fixtures.

- Policy VIS-1.7: Street Lighting. Street lighting shall only be utilized where needed to protect public safety related to traffic movement.

Section 7.3, Scenic Highways, of the Circulation Element contains policies to establish, maintain, expand, and protect scenic routes within the County. Specifically, Policy SH-1.1 recommends that "The natural qualities of designated scenic routes should be protected." As previously discussed, Inyo County contains three officially designated state scenic highways, two designated National Forest Scenic Byways, 63 miles of BLM National Scenic Byways, and 82 miles of BLM Back Country Byways.

In addition, Section 4.3, Public Services and Utilities, of the Land Use Element contains Policy PSU-1.7 regarding undergrounding utilities, "The County shall require undergrounding of utility lines in new development areas and as areas are redeveloped, except where infeasible for operational or financial reasons. The County will also work with utility providers to proactively place utilities underground as part of the utilities' ongoing maintenance program."

4.1.2 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact associated with aesthetics if the project would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3 Impact Analysis

The REGPA is designed to minimize impacts to aesthetic resources by constraining renewable energy development within the County in conjunction with the protection of visual resources provided by existing General Plan policies and proposed policies to be added to the General Plan as part of the REGPA. Indirectly, individual future projects have the potential to impact sensitive aesthetic resources.

Visual impacts are based on the degree of change in the visual environment as a result of project implementation and viewers' sensitivity to those changes. Visual changes associated with solar energy development can occur through direct and indirect activities, such as:

- Introduction of new utility infrastructure (solar collector arrays/panels, towers, transmission lines)
- Changes to landform alteration and vegetation cover
- Lighting and glare
- Construction activities
- Operation and maintenance activities

The following impact analysis provides a description of likely visual changes due to installation of PV and solar thermal energy technologies within the County. Site-specific analysis would be required to thoroughly assess potential visual impacts for a particular project at a specific location within one of the SEDAs or the OVSA. Without project-specific information about the location of a project, the type and layout of solar development technology, and the number and types of viewers, it is not possible to assess project-level impacts of a proposed solar development project. Therefore, the visual analysis below provides a programmatic analysis of expected visual changes and associated impacts as a result of those changes. It also provides a framework of visual assessment parameters and mitigation for future solar projects within Inyo County.

The visual analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the visual environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation, and community scale, facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provision for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for potential environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific visual impacts against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the visual analysis conducted for the project.

Both solar energy technologies that may be constructed under the REGPA could consist of utility scale solar energy facilities that would involve substantial areas of land disturbance. These large scale facilities would introduce dominant visual elements that would substantially contrast with the existing visual environment in terms of line, form, color, and texture. Where visible to viewers in the foreground and middle ground, such facilities would be expected to be a focal point and in many cases would dominate the view. Views from longer distances would potentially be disrupted, in that the solar energy facilities and equipment would, depending on the location, introduce industrialized visual elements within a non-industrialized landscape substantially affecting the intactness and unity of the visual environment.

More detailed visual analysis of general and technology-specific visual impacts is discussed below. The following analysis applies to all SEDAs and the OVSA because although visual conditions differ per SEDA, project-specific information and precise locations of future solar energy developments are not available at this program level and desert landscapes and views of prominent visual resources are generally similar throughout the SEDAs or the OVSA. There are also instances in the analysis where visual impacts are discussed for a specific SEDA due to certain characteristics of a particular SEDA.

Assessment of visual impacts is based on: (1) the general locations of the SEDAs and the OVSA relative to designated visual resources (i.e., site characterization); (2) construction-related activities; (3) typical components and characteristics of the proposed solar energy technology types and the resulting change to the existing visual environment due to installation of these utility scale developments; and (4) associated lighting and glare effects.

4.1.3.1 Site Characterization

In determining and identifying the proposed SEDAs, the County applied a set of criteria that included (among other things) avoidance of areas containing scenic resources to the extent feasible. Thus, the boundaries and locations of the SEDAs have largely been sited in areas where there is generally not an abundance of scenic resources within the SEDA boundaries themselves. There are no SEDAs located within Death Valley National Park or along officially designated scenic highways. Given the extent of visual resources present within the County and balancing the achievement of other criteria for identification of the SEDAs, it is not possible to completely avoid all areas designated as having scenic qualities.

Much of the land within the County (approximately 92 percent) consists of federal land managed by federal agencies, including the BLM, USFS, NPS, DOD, and BIA. Tribal reservations/lands within the BIA areas include those belonging to the Bishop Paiute Tribe, Big Pine Paiute Tribe of the Owens Valley, Fort Independence Community of Paiute, Lone Pine Paiute Shoshone Reservation, and Timbisha Shoshone Tribe. Publically owned land managed by federal agencies within the SEDAs and the OVSA is presented in Table 4.1-2 below. Solar energy projects proposed on federal lands within the SEDAs or the OVSA would be regulated by the federal agency with jurisdiction of the specific project site, including analysis of impacts to visual resources.

Table 4.1-2
PUBLICALLY OWNED LAND MANAGED BY FEDERAL AGENCIES BY LOCATION

Location	Federal Land Manager	Percentage of Total Land in SEDA/OVSA
Western Solar Energy Group		
Laws	BLM	35
Owens Lake	BLM	17
Rose Valley	BLM	76
Pearsonville	BLM	44
Owens Valley Study Area	BLM	37
Southern Solar Energy Group		
Trona	BLM	60
Eastern Solar Energy Group		
Charleston View	BLM	59
Chicago Valley	BLM	34
Sandy Valley	BLM	54

BLM = US Bureau of Land Management
OVSA = Owens Valley Study Area
SEDA = Solar Energy Development Area

As shown in Figure 4.1-1, some of the SEDAs are located partially within BLM-managed lands and are designated with various BLM VRI classifications. As discussed in Section 4.1.1, BLM VRI Classes I and II are the most valued, Class III represents a moderate value, and Class IV represents the least relative value. The BLM management directives are to preserve the existing visual character within Class I areas, and to retain the visual character within Class II areas. Solar energy projects proposed on BLM-managed federal lands within areas of a SEDA designated as Class I or II would not achieve these management directives because the infrastructure would result in a substantial change to the visual environment in that it would introduce dominant visual elements that would substantially contrast with the existing visual environment in terms of line, form, color, and texture. BLM VRI Class I and Class II designated areas are located within portions of the Rose Valley, Charleston View, and Chicago Valley SEDAs, as well as within the OVSA. Proposed installation of solar energy projects on BLM-managed federal land would require coordination and compliance with BLM visual guidelines. Given the designated high value of visual resources within these areas, proposed solar energy developments within BLM VRI Class I and II areas of the Rose Valley, Charleston View, and Chicago Valley SEDA or the OVSA would result in significant visual impacts.

Solar energy development in areas of a SEDA or the OVSA designated Class III may also result in potentially significant impacts for the same reasons as above. The BLM management directive for Class III designated areas is to partially maintain the visual environment through only moderate changes. BLM VRI Class III designated areas are located within portions of the Owens Lake, Rose Valley, Pearsonville, Trona, Charleston View, and Chicago Valley SEDAs. Coordination with BLM and compliance with BLM visual guidelines would be required to address adverse visual impacts within these federal lands. As discussed above, solar energy infrastructure would substantially change the existing visual environment. Depending on the specific solar energy project, visual changes from solar energy facilities within a Class III designated area could be more than moderate as mandated by the BLM management directive for Class III areas. Therefore, installation of solar energy developments within BLM VRI Class III areas of the Owens Lake, Rose Valley, Pearsonville, Trona, Charleston View, and Chicago Valley SEDAs would result in potentially significant visual impacts.

Similarly, proposed development of solar energy facilities on federal land managed by federal agencies within the SEDAs or OVSA would require coordination with the respective federal agency and compliance with their visual resource guidelines (i.e., BLM). Solar energy facilities proposed within these federal lands could adversely impact visual resources or conflict with visual guidelines and policies of the BLM. While high-value scenic resources within the boundaries of the SEDAs are limited, there are several public vantage points from areas outside of the SEDAs with views into them. US 395, SR 178, and other local roadways within and adjacent to the SEDAs would potentially provide motorists with views of solar energy facilities. US 395 is a well-traveled highway that traverses the entire County though low-lying valley floors that provides broad, expansive views to surrounding foothills and prominent mountain ranges. A 20-mile segment of US 395 between Fort Independence and Fish Springs Road is an officially designated state scenic highway and is located within the OVSA. Additionally, a 16-mile segment of SR 168 partially located within the OVSA, west of Bishop from Camp Sabrina to Brockman Lane, is also a designated state scenic highway. Changes to views from these designated scenic highways due to solar energy facilities could substantially affect scenic views and vistas provided from them.

Similarly, views into some of the SEDAs are available from public vantage points at other major public destinations, including Death Valley National Park and the Manzanar National Historic Site. Death Valley covers a large area of the County and provides several higher elevation vantage points where distant views into some of the SEDAs and the OVSA could be available. Park users who reach these higher elevations generally do so with the purpose of enjoying the scenic vista. Changes to views from these public vantage points due to solar energy facilities could substantially affect such views.

The Manzanar National Historic Site is located off of US 395 between Lone Pine and Independence within the OVSA. This national historic site has attracted more than 70,000 visitors annually since 2004 (NPS 2014). Views of future solar energy facilities within the OVSA could potentially be provided from this site; however, the focus of visitors of the national historic site is generally inward and on the facilities within the site rather than on the surrounding areas and visual landscape. For this reason, viewers from this location would, in general, not be highly sensitive to changes in the visual environment resulting from solar energy projects in close proximity to the national historic site within the OVSA. Still, the presence of such development could result in an impact to the sense of isolation that was part of the psychological warfare perpetuated by the U.S. government against detainees at Manzanar during World War II.

Given the high number of viewers along US 395, motorists would be highly sensitive to changes in the visual environment resulting from solar energy projects within the SEDAs along, or adjacent to, the US 395 corridor, including Laws, Owens Lake, Rose Valley, Pearsonville, and the OVSA. The number of viewers is much less within the Trona, Charleston View, Chicago Valley, and Sandy Valley SEDAs because there are no major highways or heavily traveled roadways adjacent to, or within, these SEDAs. Thus, viewer sensitivity within these SEDAs would be expected to be lower than the SEDAs along US 395. Views into SEDAs would also be available from the multitude of hiking/biking trails within the foothills and large mountain ranges or Wilderness Areas (refer to Table 4.1-1) within the County. Many of these public trails are located at higher elevations, which could afford open expansive views into the SEDAs and the OVSA. Depending on the size and nature of solar energy infrastructure, visual changes within the SEDAs could be highly noticeable and substantial from these public vantage points that provide scenic vistas or viewpoints. Where visible, views could change from visually unified natural landscapes to a variety of strong geometric lines and forms with contrasting colors and textures. The introduction of these visual elements within a natural setting would disrupt the unity and intactness of the visual environment and would degrade the existing visual character or quality of the site and its surroundings, as well as substantially affect scenic vistas, resulting in potentially significant impacts.

4.1.3.2 Construction Impacts

During construction of solar energy developments, construction-related activities would visibly contrast with existing conditions due to removal of existing vegetation and the introduction of new, visually dominant elements, including raw soil, newly graded areas, construction-period fencing, construction equipment, and construction materials stockpiling and storage. The visual impact would depend on the type and size of the project, but could range from six to several thousand acres and spanning many months. Clearing of vegetation and other natural elements (such as rock outcrops and slopes) would create a stark contrast in pattern elements within the landscape. Clearing could potentially disrupt the intactness and unity of a generally homogenous desert landscape by removing the varied natural elements and replacing them with a more uniform color and texture of bare soil.

Construction of new temporary or permanent access roads to support project construction and maintenance activities may be required. Construction of new access roads would introduce new line elements that could contrast with existing landforms. Textures and colors may also differ from the surrounding landscape depending on the surface treatments of the roads. While roads are common facilities in and around the SEDAs, access or maintenance roads could be constructed within undeveloped or mostly undeveloped areas, which could disrupt the intactness of the landscape.

Construction of solar energy facilities would require construction staging areas for storage of equipment and materials and stockpiling (if required). Staging areas for solar energy projects typically include a laydown area, a yard, trailers, and parking areas. The size of the staging area would depend on the particular project, but could be as large as 100 or more acres. The extent of visual impacts associated with construction staging areas would depend on the length of the construction period, size of the staging area, nature of required clearing and grading, and the types and amounts of materials stored. Regardless, staging areas could introduce contrasting visual elements within intact viewsheds.

During construction, a variety of equipment and vehicles would be operating on the site at any given time. The use of heavy construction equipment to grade the access roads and the solar array field would be required. Vehicles typically used in the construction of the solar energy developments include scrapers, dozers, backhoes, graders, cranes, skip loaders, forklifts, and various types of trucks. The operation and storage of large construction equipment would be visible during the construction period, which could last from less than one year to several years, depending on the size and type of solar energy project. Views of construction vehicles would not be long-term, but as with the other construction-relate visual elements, they would highly contrast with the surrounding landscape.

Overall, construction-related visual impacts would not be long-term and would be limited to the duration of the construction period. Nonetheless, because the precise locations of specific solar energy development sites and associated construction staging areas within the SEDAs and the OVSA are not known at this time, future solar facilities could be located in areas where these construction-related elements could change the composition of the visual pattern in the existing setting for the reasons described above, which could degrade the visual character and/or quality of the area or its surroundings. While temporary in nature, short-term adverse visual impacts to visual character associated with construction would be potentially significant.

4.1.3.3 Operational Impacts

As previously stated, US 395 is the major transportation corridor within Inyo County. Approximately 95 percent of the traffic on US 395 within Inyo County originates from outside the County, which indicates that US 395 carries a substantial amount of interstate and interregional travel (Inyo County Local Transportation Commission 2009). Because of the number of viewers along US 395, motorists would be highly sensitive to changes in the visual environment resulting from solar energy projects within the SEDAs along, or adjacent to, the US 395 corridor, which include Laws, Owens Lake, Rose Valley, and Pearsonville, as well as the OVSA. Thus, visual impacts resulting from the introduction of solar energy facilities and transmission line connections could be particularly significant within these SEDAs and the OVSA.

The number of viewers is much less within the Trona, Charleston View, Chicago Valley, and Sandy Valley SEDAs because there are no major highways or heavily traveled roadways adjacent to, or within, these SEDAs. As a result, viewer sensitivity associated with the introduction of solar energy facilities and transmission line connections within these SEDAs is expected to be lower than the SEDAs along, or adjacent to, US 395. While potentially significant visual impacts could occur (as discussed below), the severity of the impact may be less than those assessed within the SEDAs (and OVSA) along, or adjacent to US 395.

Solar Energy Technology Components

<u>Solar Photovoltaic Systems</u>

PV facilities consist of PV panels in rectangular arrays that are mounted on existing structures, such as rooftops or parking structures, or ground mounted as free standing structures. Arrays on ground-mounted facilities can either be mounted on a fixed-tilt structure that tilts the panels toward the sun or on a more complex sun-tracking structure that captures additional energy from the sun over longer periods of daylight. Ground-mounted structures range between 4 and 30 feet in height depending on the technology. PV developments typically require approximately

6 acres of relatively flat land (generally slopes with a 5 percent or less gradient) per MW of energy produced and thus, for larger PV developments, arrays could encompass a total area of thousands of acres. In addition to the array fields, other structures associated with PV systems typically include a maintenance building, administration building, guardhouse, tanks for storage of water and chemicals, electrical components, fencing, and lighting. These ancillary buildings are normally one-story and constructed of sheet metal, concrete, or cinder block.

PV panels are generally low-profile structures at less than 10 feet tall. Tracking panels are larger and taller than fixed-tilt PV panels, but both PV types do not consist of tall vertical elements. Ancillary buildings, storage tanks, lighting, and possibly fencing would be taller than the arrays. Larger PV solar projects create expansive fields of man-made industrialized elements that exhibit geometric forms with strong line elements. The solar fields are comprised of multiple panels that are grouped into arrays and configured in rectilinear geometric rows that form blocks or grids across a project site. Larger arrays create a uniform field with consistent form, color, and texture that creates visual unity within the field itself. Figure 4.1-2 pictures typical PV solar energy facilities.

Because PV arrays are comprised of low-profile elements, they do not result in dominant vertical massing effects; however, they create a large scale dominant visual feature that covers large areas of relatively flat land. Arrays have dark-colored surfaces and metallic finishes on the mounting structures and frames. The transformation of existing land to an industrial solar farm exhibiting repeating elements of form, line, color, and texture would contrast with the existing character of desert setting with prominent mountainous backdrops. Visual contrast would be highly apparent when PV components are viewed from foreground viewing distances. Contrast in form and color would also be visible when viewed from middle ground and background viewing distances. The low profile of the PV panels would reduce their visibility when viewed from low viewing angles, particularly from longer distances. Views from higher elevations, however, would encompass most or all of the facility, and the contrasting geometric forms and colors would be more evident. Therefore, future PV projects would introduce visual features that substantially contrast with, and degrade the existing visual character or quality of the site and its surroundings, resulting in significant visual impacts.

Solar Thermal Systems

Solar thermal technologies use mirrors or lenses to focus sunlight onto a receiver that contains heat transfer fluid that is used to drive an engine to produce electricity. In California, solar thermal technologies that are being implemented on a utility scale include solar trough and solar power towers. These technologies and their associated visual impacts are discussed below.

Solar Trough Facilities

Solar trough projects include a parabolic trough concentrator that uses a single-axis tracking receiver to collect concentrated sunlight. The components of a typical utility scale parabolic trough facility include the solar field, power block, cooling system, electrical switchyard and power conditioning facility, thermal storage facilities (if present), and various support buildings. The solar field consists of long rows of parabolic solar collectors lined with curved mirrors. A receiver, which is essentially a steel tube encased by a glass tube, runs a few feet above the reflector in the center of the trough and along the long axis and pipes extend from the trough. It appears as a long line element in the middle of each trough. The tracking system allows the reflectors to tilt from east to west to track the sunlight throughout the day and thus, the angle of the reflectors are not fixed, but change over the course of the day. The height of a trough assembly varies between approximately 18 and 25 feet. Solar trough developments typically require approximately six acres of relatively flat land (generally slopes with a three percent or less gradient) per MW of energy produced and typically cover more than 500 acres; however, larger solar trough development could encompass thousands of acres.

Solar trough technology requires the use of steam turbine generators and supporting equipment. Facilities associated with steam turbine generators include a building to house the generator, a cooling tower, condensers, tanks for water and other chemicals, pipes, and evaporation ponds. These power block, cooling system, and ancillary facilities would be taller and in some cases, substantially taller than the arrays. The steam turbine generator building could be up to approximately 60 feet tall, condensers could be up to approximately 115 feet tall, and the cooling tower could be up to approximately 40 feet in height. The cooling towers may also emit water vapor plumes. Figure 4.1-3 pictures solar trough facilities.

Similar to PV facilities, the arrays within a solar trough facility consist of several rows of generally low-profile structures arranged in a rectilinear geometric configuration that covers large expanses of flat land (on slopes of less than three percent). This configuration of arrays creates a consistent visual pattern of line and texture that markedly stands out against the natural visual patterns in the surrounding landscape. Within the solar field are areas containing the power block, cooling system, and ancillary facilities. Because of the varying forms of these facilities, they are highly noticeable and extend above the surface plane created by the vast expanse of the arrays. Additionally, water vapor plumes may be visible. These features would introduce industrialized visual elements within the existing desert setting.

From nearby viewpoints and lower elevations, the form and texture of the collectors would be visible and the geometry and uniform spacing, along with the hard reflective surfaces, would contrast with the natural forms, lines, and colors of the surrounding landscape. Views from more elevated locations would encompass more of the facility that would capture the expanse of the developed features. The rectilinear arrangement and associated pattern elements of the rows of collectors could be more apparent, as well as any contrast in color between the collectors and ground surface. Depending on the angle of the reflectors, the mirrors may also reflect the sky, clouds, vegetation, soil, and other landscape elements around the facility, which can cause differences in apparent color of the array. More of the ancillary facilities would be visible from higher viewing angles that would protrude above the collector field and contrast with both the immediate setting of the solar field and the larger desert landscape.

Solar troughs create a large scale dominant visual feature that covers large areas of relatively flat land. While the arrays themselves are not tall vertical elements, other components would be of sufficient height to be visible in most views of the facility and would represent large scale industrial elements to an otherwise natural setting (depending on the location of future trough facilities within a particular SEDA or the OVSA). For the reasons discussed above, future solar trough facilities within the SEDAs or the OVSA could substantially contrast in form and line elements with the existing setting. The resulting change in the visual environment could potentially degrade the existing visual character or quality of the site and its surroundings, resulting in significant visual impacts.

Solar Power Tower Facilities

Solar power towers use an array of tracking flat mirrors, called heliostats, to focus sunlight onto a fixed central receiver. Utility scale power tower facilities consist of a tall central tower surrounded by hundreds to thousands of heliostats that concentrate the sun's rays on a central point at the top of the tower. The focused sunlight superheats a heat transfer fluid, which is then converted to steam to power a steam turbine generator to produce electricity. The heliostats are equipped with tracking systems to capture sunlight throughout the day. Power tower facilities also include a power block, cooling systems, and other ancillary facilities similar to those described for solar trough systems. The height of the towers can range from approximately 150 to 750 feet tall. Power towers typically require approximately six acres of land per MW of energy produced and generally encompass several thousand acres.

Heliostats can be a variety of shapes and sizes, but generally consists of large, flat mirrors mounted on a pedestal or other support structure. Large numbers of heliostats are placed around the tower in a geometric pattern in curved rows that creates strong line elements and a repeating circular pattern of structures. Figure 4.1-4 pictures power tower facilities.

Similar to solar troughs, the heliostat arrays create a dominant visual feature that contrasts with the surrounding desert landscape. While they are not vertically tall elements, they comprise a large horizontal plane of regularly spaced geometric pattern elements that distinctly differ from the forms, colors, and textures of its surroundings.

The towers are very tall structures (up to 750 feet tall) with a strong vertical profile that would substantially extend above the heliostat array field and any other built feature within the landscape. At these heights, the towers would be visible for long distances and would attract visual attention. The towers could break the horizon line of surrounding hillside and mountain views and would be highly dominant visual elements within the viewshed, both from nearby and distant viewing locations. The height and strong vertical line of the tower would sharply contrast with the generally horizontal line of the collector array plane and also with the generally flat landscapes in which utility scale solar energy projects would be located.

Additionally, the sunlight focused on the tower's receiver by the heliostats would cause the receiver to appear to glow at an intensity that would be visible from long distances. The perceived glow is actually an effect of reflected sunlight diffusion. For towers taller than 200 feet, Federal Aviation Administration (FAA) guidelines could require aircraft warning lights that flash white during the day and red at night. These lighting effects would further attract the visibility of the towers during daylight hours and at night, particularly given the dark nighttime sky conditions that are typical of rural and natural settings.

The rectilinear or conical forms (depending on the design of the tower), industrial gray color, luminous tops, and smooth surfaces of the power towers would be markedly different than any other landscape or built feature in the viewshed of a particular SEDA or the OVSA. The introduction of power towers into the desert landscape that contains highly scenic backdrops would result in a substantial degree of contrast to the existing visual environment, as there are no other structures like them occur in the vicinity. The sheer height and mass of the towers would be disproportionate to anything else in the view and their dominance would be very high. The resulting change in the visual environment would potentially degrade the existing visual character or quality of the site and its surroundings, resulting in significant visual impacts.

Transmission Infrastructure

The locations of the SEDAs were determined, in part, based on their proximity to existing electrical transmission facilities as the County is committed to minimizing the need for new or additional transmission infrastructure. Future solar energy projects in the Western Solar Energy Group (within the Laws, Owens Lake, Rose Valley, and Pearsonville SEDA, as well as the OVSA) would connect to existing LADWP transmission lines that extend through Owens Valley or Southern California Edison lines (for the Laws and Pearsonville SEDAs). Within the Southern Solar Energy Group, a potential off-site transmission corridor has been identified for the Trona SEDA, and would likely extend along SR 178 to an existing transmission line located along US 395 near the City of Ridgecrest (in Kern County). Within the Eastern Solar Energy Group, connections to a planned new line in western Nevada would be required to support future development in the Sandy Valley SEDA and potential off-site transmission corridors have been identified for the Chicago Valley and Charleston View SEDAs. The off-site transmission corridor for the Chicago Valley SEDA would extend generally east-northeast from the SEDA to an existing transmission line located along SR 160 in Nevada. The off-site transmission corridor for the Charleston View SEDA would extend generally northeast from the eastern SEDA boundary along Tecopa Road to an existing transmission line located along US 160 in Nevada.

Connections to existing and planned lines would consist of underground connections where feasible in compliance with General Plan Policy PSU-1.7. Short-term visual impacts associated with site disturbance during utility trenching and installation would be temporary and would not substantially degrade the visual character or quality of the area. Electrical utility connections would involve minor trenching along generally linear areas and surface land disturbances (i.e., clearing and trenching) that would not be highly visible due to the lack of vertical elements. Associated construction activities would not be of a sufficient magnitude to disrupt the visual unity or intactness of the utility corridors and the natural scenic backdrops.

If undergrounding of the utility connections is not feasible, overhead connections would be required. Electrical transmission towers required for utility scale solar energy projects could vary in height between 70 and 125 feet and could be made of wood, metal, concrete, or lattice structures. The installation of these tall vertical elements would be highly visible and would introduce additional industrialized visual elements into the landscape. While electrical transmission towers and lines do not represent new or unique elements in rural or even natural areas because other towers and lines occur in the vicinity of the SEDAs and the OVSA, these elements could markedly contrast with the existing visual environment because project-specific information regarding electrical transmission connection locations and associated tower height requirements are not known. Taller towers constructed within relatively undeveloped areas with a high level of intactness would create a high degree of visual contrast. Additionally, aircraft safety lighting could be required on taller structures similar to those described above for power towers. As a result, the change in the visual environment due to installation of overhead electrical utility connections could potentially degrade the existing visual character or quality of the site and its surroundings, resulting in significant visual impacts.

4.1.3.4 Lighting and Glare Impacts

Construction Impacts

Construction activities would generally occur during daytime hours. Limited lighting may be used during construction to provide security for equipment and materials storage components. Such lighting would be directed downward and shielded to focus on the desired areas only and to minimize light spill to off-site areas. No substantial sources of glare that would affect daytime views in the area are anticipated during construction. As a result, construction activities are not anticipated to result in new sources of substantial light or glare, and impacts would be less than significant.

Operational Impacts

Lighting

Future solar energy development projects would include exterior security lighting, which would likely consist of motion-activated lighting installed at access gates and perimeter lighting. This lighting would be activated infrequently during periods of nighttime activity. Consistent with General Plan Policy VIS-1.6, lighting fixtures would be required to be directed inward onto the site and downward to minimize night sky impacts and light spill at off-site areas. Wherever feasible and consistent with safety and security, lighting would be kept off when not in use. Therefore, site lighting would not create a new source of substantial light which would adversely affect nighttime views in the area.

Operation of power towers can result in two interesting lighting phenomena. As previously discussed, sunlight focused on the tower's receiver by the heliostats causes the receiver to appear to glow at a relatively high intensity. This diffuse reflected sunlight at the top of towers results in a highly visible and bright source of light in the daytime. Additionally, during certain times of the day from certain angles, the reflection of sunlight on ambient dust particles can sometimes result in the appearance of light streaming down from the tower in a conical pattern. Given the height of the tower, these lighting effects are highly visible from great distances, particularly since solar energy developments are typically constructed on relatively flat expansive areas. These lighting effects represent new substantial sources of daytime lighting. Associated lighting impacts would be significant.

For tall power towers and electrical transmission towers, FAA guidelines could require aircraft warning lights that flash white during the day and red at night. These lighting effects would further attract the visibility of the towers during daylight hours and at night, particularly given the dark nighttime sky conditions that are typical of rural and natural settings and could result in new substantial sources of light, especially during the nighttime. Lighting impacts associated with aircraft warning lights would be significant.

Glare

The amount of reflectivity varies greatly among solar technologies, with concentrating solar power technologies (such as solar trough and power tower) being highly reflective, and solar PV being primarily absorptive. Solar PV panels are designed to absorb sunlight to convert it into electricity. To keep the PV cells clean and protect them from damage, but still allow for the collection of sunlight that is converted into energy, solar panels are covered with a pane of glass, which can normally be a reflective material. However, solar panels utilize a low-iron content glass that is specifically designed to provide high transparency to increase light transmission to the PV cells and reduce the absorption, refraction, and reflection of light by the glass. These characteristics of the solar panel glass, intended to increase light absorption, however, do not entirely eliminate reflection. The panels and supporting structures, which consist of metal surfaces, do reflect light that could result in glare effects at nearby locations. Glare impacts associated with PV systems would be potentially significant.

Solar trough and power tower technologies include collectors with highly reflective surfaces (i.e., mirrors) that are used to reflect sunlight. In addition to the collector/reflector arrays, these types of facilities would normally include other components that may have reflective surfaces, such as array support structures, components of the steam turbine generator, piping, fencing, and possibly transmission towers. These reflective surfaces can create glare effects. Additionally, power tower receivers can be a source of diffuse reflections. In some situations, these reflections could be visible for long distances. As a result, glare impacts associated with solar trough and power tower systems would be potentially significant.

4.1.4 Level of Significance before Mitigation

Based on the analyses in Section 4.1.3, future utility scale, distributed generation, and community scale solar energy projects under the REGPA could result in potentially significant visual impacts related to: (1) scenic vistas and scenic resources; (2) degradation of the existing visual character or quality of the site and its surroundings; and (3) light and glare. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to visual resources when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA.

4.1.5 Mitigation Measures

Visual resources mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to visual resources. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on aesthetics and would not require a visual resource evaluation or implementation of the visual resources mitigation measures listed in this section. In such cases, the County shall document that no impacts to visual resources would occur and no mitigation measures are necessary in lieu of the aesthetics evaluations required in Mitigation Measures AES-1 and AES-2.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact visual resources, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.1.3 and 4.1.4, implementation of solar energy projects would result in potentially significant impacts related to scenic vistas and scenic resources, degradation of visual character and visual quality, and light and glare. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified visual impacts, but would not avoid or reduce them to below a level of significance. Even with implementation of these mitigation measures, the potential exists for significant unavoidable visual impacts to occur as a result of the construction and operation of solar energy projects.

MM AES-1: Prepare visual studies that include existing views, scenic vistas, and visual resources and evaluate the potential impacts to existing visual resources.

Site-specific visual studies shall be prepared to assess potential visual impacts for all proposed solar energy projects greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA. The visual study shall include assessment of the existing visual environment, including existing views, scenic vistas, and visual resources, and evaluate the potential of the proposed solar energy project to adversely impact resources and degrade the visual character or quality of the site and its surroundings. The study shall include assessment of public views from key observation points, the locations of which shall be determined in consultation with County staff and, if applicable, other public agencies with jurisdiction over the project site (e.g., BLM). Visual simulations shall be prepared to conceptually depict post-development views from the identified key observation points.

The analysis and results of the study shall be documented in a memorandum that will include: (1) an assessment of the existing visual environment, including existing views, scenic vistas, and visual resources and (2) an evaluation of the potential of the proposed solar energy project to adversely impact resources and degrade the visual character or quality of the site and its surroundings. Applicable recommendations from the project-specific visual analysis shall be incorporated into the associated individual project design to address identified potential visual impacts.

MM AES-2: Reduce potential effects of glare by preparing site-specific glare studies that inform project design.

Site-specific glare studies shall be prepared for all proposed solar energy projects greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA to assess potential glare impacts. Applicable results and recommendations from the project-specific glare study shall be incorporated into the associated individual project designs to address identified potential visual impacts.

MM AES-3: Minimize visual contrast using colors that blend with surrounding landscape and do not create excessive glare.

The project applicant for future solar energy projects that are greater than 20 MW (utility scale) and for proposed solar energy that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources shall treat the surfaces of structures and buildings visible from public viewpoints so that (1) their colors minimize visual contrast by blending with the surrounding landscape and (2) their colors and finishes do not create excessive glare. Surface color treatments shall include painting or tinting in earth tone colors to blend in with the surroundings desert and mountains. Materials, coatings, or paints having little or no reflectivity shall be used.

MM AES-4: Install natural screens to protect ground-level views into the project.

For all proposed solar energy projects greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA, where existing screening topography and vegetation are absent or minimal, natural-looking earthwork landforms (such as berms or contour slopes), vegetative, or architectural screening shall be installed to screen ground-level views into the project site. The shape and height of the earthwork landforms shall be context sensitive and consider distance and viewing angle from nearby public viewpoints.

MM AES-5: Prepare lighting plan that informs ways to reduce night lighting during construction and operation.

The project applicant shall prepare a lighting plan for all proposed solar energy projects greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA that documents how project lighting would be designed and installed to minimize night sky impacts during construction and operation. The lighting plan shall include, at minimum, the following lighting design parameters:

- Lighting shall be of the minimum necessary brightness consistent with operational safety and security.
- Lighting shall incorporate fixture hoods/shielding with light directed downward or toward the area to be illuminated.
- Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security.
- Project lighting shall be kept off when not in use whenever feasible and consistent with safety and security.

MM AES-6: Treat PV solar panel glass with anti-reflective coating.

For proposed PV facilities greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA, glass used to cover solar panels shall be treated with an anti-reflective coating to further decrease reflection and increase the transmission of light through the glass to the cells.

MM AES-7: Coordinate with the FAA when considering the use of audio-visual warning systems.

For projects requiring aircraft warning lights, the project applicant shall coordinate with the FAA to consider the use and installation of audio-visual warning systems technology[1] on tower structures. If the FAA denies a permit for the use of audio-visual warning systems, the project applicant shall limit lighting to the minimum required to meet FAA safety requirements.

MM AES-8: Projects on federal land will comply with the respective federal agency's visual guidelines and policies.

Solar energy projects proposed on federal land within individual SEDAs and the OVSA shall be coordinated with the federal agency that is responsible for the management of the land and shall comply with the respective federal agency's visual guidelines and policies.

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[1] Audio-visual warning system technology consists of all-weather, day and night, low-voltage, radar-based obstacle avoidance systems that activate lighting and audio signals to alert pilots of the presence of potential obstacles. The lights and audio warnings are inactive when there is no air traffic in the area of potential obstruction.

MM AES-9: The project will implement best management practices and measures during construction to reduce the visual and aesthetic effects of the construction site.

The following measures shall be implemented for all proposed solar energy projects greater than 20 MW (utility scale) and for proposed solar energy projects that are distributed generation or community scale that have been determined by a County qualified planner to have the potential to impact visual resources within the individual SEDAs and the OVSA during construction:

- Construction boundaries and staging areas shall be clearly delineated and where appropriate fenced to prevent encroachment onto adjacent natural areas.
- Construction staging and laydown areas visible from nearby roads, residences, and recreational areas shall be visually screened using temporary fencing. Fencing shall be of an appropriate design and color to visually blend with the site's surroundings.
- Existing native vegetation shall be preserved to the greatest extent possible.
- Project grading shall utilize undulating surface edges and contours that repeat the natural shapes, forms, textures, and lines of the surrounding landscape.
- Exposed soils shall be restored to their original contour and vegetation.
- Stockpiled topsoils shall be reapplied to disturbed surfaces.

MM AES-10: Projects requiring overhead electrical transmission connections will consider design and installation techniques that reduce visual impacts.

For projects that require overhead electrical transmission connections to existing transmission lines and for the potential off-site transmission corridor to serve the Trona, Chicago Valley, and Charleston View SEDAs, the following shall be considered in the design and alignment of the transmission line connections:

- Avoid placing transmission towers and structures along ridgelines, peaks, or other locations where they would silhouette against the sky and effect the horizon.
- Place transmission corridor connection alignments along edges of clearings or at transition areas (i.e., natural breaks in vegetation or topography).
- Treat transmission towers and structures with color and surfaces to reduce visual contrast with the surrounding visual landscape.
- Use of appropriate and context-sensitive transmission tower types (i.e., lattice structures compared to monopoles) to reduce visual contrast with the surrounding visual landscape.

4.1.6 Significant Unavoidable Adverse Impacts

Implementation of the mitigation measures identified above would reduce visual impacts to the extent feasible, but with respect to scenic vistas, scenic resources, visual character and visual quality, and light and glare, impacts would remain significant and unavoidable.

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4.2 AGRICULTURE AND FORESTRY RESOURCES

This section describes the environmental setting and regulatory framework for agriculture and forestry resources and analyzes the potential impacts on agriculture and forestry resources that would result from implementation of the project. The potential effects on agriculture and forestry resources were evaluated according to Appendix G of the State CEQA Guidelines to determine their level of significance.

4.2.1 Existing Conditions

Agriculture is important to the culture, heritage, and economy of the County. Dating back to the late 1800s and due primarily to the extensive rangelands available for grazing, the primary agriculture activity in the County is livestock production, consisting of raising cattle, pack animals (horses, mules, and burros for transporting people and supplies), poultry, and sheep. A lesser amount of acreage of intensive row and field crop agriculture occurs, and irrigated pasturelands are also present within the County. Apiary operations are another small yet consistent agricultural pursuit within the County (Inyo County 2001, as amended). Crop production includes alfalfa hay, irrigated pasture, potatoes, turf, dates and other fruits, and honey (Agricultural Commissioner 2013).

Approximately 31,652 acres are designated for agricultural land use in the General Plan (Inyo County 2001, as amended), and an additional 679,432 acres are devoted to BLM grazing allotment (BLM 2013). Table 4.2-1 summarizes the total area of agricultural lands and BLM grazing allotment in the County, and by individual SEDAs and the OVSA.

Table 4.2-1
AGRICULTURAL LAND USE AND
BLM GRAZING ALLOTMENT DESIGNATIONS BY LOCATION

Location	Agricultural Land Use (acres)	BLM Grazing Allotment (acres)
Western Solar Energy Group		
Laws SEDA	1,066	--
Owens Lake SEDA	--	10,818
Rose Valley SEDA	472	17,587
Pearsonville SEDA	--	2,331
Owens Valley Study Area	19,728	--
Eastern Solar Energy Group		
Charleston View SEDA	--	20,086
Sandy Valley SEDA	2,898	--
Total	**24,164**	**50,822**
Total in County	31,652	679,432

Sources: Inyo County 2001, as amended; BLM 2013
BLM = US Bureau of Land Management; SEDA = Solar Energy Development Area

Approximately 76 percent of all land designated as agricultural land use in the General Plan falls within the SEDAs and the OVSA. These areas include state, federal, tribal, and privately-owned lands. Approximately 7.5 percent of all BLM land designated as grazing allotment within the County falls within the SEDAs and the OVSA.

Approximately 83 percent (20,062 acres) of land within the SEDAs designated as agricultural land use in the General Plan is owned by LADWP, and 6 percent (1,456 acres) is managed by the BLM. An additional 50,822 acres of lands in the SEDAs are managed by the BLM for grazing allotment. General Plan-designated agricultural lands under jurisdiction of the LADWP include 1,066 acres within the Laws SEDA, and an additional 18,996 acres in the OVSA. A total of 1,456 acres of lands designated for agricultural land use in the General Plan within the OVSA is under the management of the BLM. BLM-grazing allotment includes 10,818 acres in the Owens Lake SEDA, 17,587 acres in the Rose Valley SEDA, 2,331 acres in the Pearsonville SEDA, and 20,086 acres in the Charleston View SEDA.

The remaining 2,646 acres of lands in the SEDAs and OVSA designated for agricultural land use make up approximately 8 percent of the total lands designated as agricultural land uses in the General Plan. The Rose Valley SEDA contains 472 acres of lands designated for agricultural land use in the General Plan. These agricultural lands consist of parcels ranging from 2 to 159 acres in size and are privately owned and owned by local agencies. The 3,097-acre Sandy Valley SEDA is entirely designated as agricultural lands with parcels 40 acres or greater. Solar development in any of the SEDAs would be subject to the policies and regulations of General Plan Goals GOV-6.1 and AG-1. The County will continue to implement these goals and coordinate with developers, landowners, and managing agencies to conserve and promote agricultural land uses in the County.

LADWP owned and BLM-managed lands are not under County jurisdiction; however, the County coordinates with the LADWP and BLM to guide development in the County. Policy GOV 6.1 relates to conservation and expansion of agricultural uses on public lands and lands owned by LADWP. This policy would continue to be implemented in on-going efforts for land planning coordination with the LADWP and public land-holding agencies in the County.

Pursuant to the Agreement between LADWP and the County (refer to Section 4.2.1.4), LADWP is responsible for maintaining irrigated LADWP-owned lands for uses including alfalfa production, pasture, and livestock (Type E classification in the Agreement). Approximately 18,830 acres of lands are classified as Type E in the Owens Valley. Other classifications may be used for grazing, such as Type A classification (which would not be affected by groundwater pumping or by changes in surface water management). Additionally, under the OVLMP, LADWP manages 50 grazing leases on approximately 342 square miles (219,115 acres) of LADWP-owned land in the Owens Valley.

4.2.1.1 Western Solar Energy Group

Laws Solar Energy Development Area

Existing land uses within the Laws SEDA include the unincorporated community of Laws, some minor agricultural land east of US 6, and undeveloped lands. Approximately 1,066 acres of this

SEDA are designated for agricultural land use in the General Plan and are owned by the LADWP. The agricultural land use parcels range from less than an acre in size to 557 acres. LADWP owned lands in the SEDA are classified as Type A, B, C, and E classifications under the Agreement. Some of the area included in the Laws SEDA has previously been disturbed by groundwater pumping, the abandonment of agricultural activities, and water management practices.

Owens Lake Solar Energy Development Area

The Owens Lake SEDA is largely barren. Over 45 square miles are managed for dust control through shallow flooding, vegetation management, and gravel cover. BLM manages lands along the perimeter of the SEDA, with approximately 10,818 acres of BLM lands in the southeastern portion of the SEDA under grazing allotment.

Rose Valley Solar Energy Development Area

This SEDA is largely undeveloped, with the majority of the SEDA (approximately 17,587 acres) designated as BLM grazing allotment. A total of 472 acres of lands designated for agricultural lands are located in the northern portion of the SEDA, east of US 395. These designated agricultural lands consist of parcels ranging from 2 to 159 acres in size and are privately owned and owned by local agencies.

Pearsonville Solar Energy Development Area

The Pearsonville SEDA consists almost entirely of undeveloped land. Approximately half of the SEDA is BLM managed lands under grazing allotment (approximately 2,331 acres).

Owens Valley Study Area

Outside of established communities, the predominant land uses in the Owens Valley are ranching and recreation. A large portion of the valley floor is used as rangeland for cattle and livestock. The OVSA contains 62 percent of the County's agricultural land uses (approximately 19,728 acres). The majority of those lands (96 percent, 18,996 acres) are owned by LADWP and leased for crop production and grazing. The remaining 642 acres designated as agricultural are mostly small, privately or local agency-owned parcels. The County owns parcels ranging from 6 to 18 acres in size. The privately owned parcels are typically less than an acre in size, although one parcel is nearly 600 acres. LADWDP-owned lands in the OVSA are classified as Types A, B, C, D, and E under the Agreement.

4.2.1.2 Southern Solar Energy Group

The Trona SEDA is largely undeveloped and the majority of the SEDA is BLM managed lands. The Trona Airport is a one runway airport located in the southeast portion of the SEDA. Private properties within the SEDA are developed with large-lot residential and commercial land uses. No agricultural land uses or land designated as BLM grazing allotment occur in this SEDA.

4.2.1.3 Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The SEDA is largely undeveloped and privately or County-owned. The unincorporated community of Chicago Valley is a small development of residential properties is located east of Chicago Valley Road, near the center of the SEDA. No agricultural land uses or land designated as BLM grazing allotment occur in this SEDA.

Charleston View Solar Energy Development Area

The SEDA is largely undeveloped with the majority of the SEDA being BLM managed lands in grazing allotment (20,086 acres). The unincorporated community of Charleston View is located along Tecopa Road. The area has been developed with a network of roads sparsely developed with residential and commercial land uses.

Sandy Valley Solar Energy Development Area

Existing land uses in the Sandy Valley SEDA consists of undeveloped land and agricultural uses. The entire SEDA (3,097 acres) is designated as agricultural land uses in the General Plan. Approximately 46 percent of the land is privately owned and approximately 54 percent is managed by the BLM. The privately owned land is mostly comprised of parcels approximately 40 acres in size, although some larger (up to 164 acres also occur).

4.2.1.4 Regulatory Framework

Federal Regulations

<u>Farmland Protection Policy Act (Public Law 97-98, 7 USC Section 4201)</u>

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years.

The FPPA does not authorize the federal government to regulate the use of private or non-federal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency, or with assistance from a federal agency.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland or other land, but not water or developed land. The Natural Resource Conservation Service (NRCS) uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level (NRCS 2014).

Federal Land Policy and Management Act

The FLPMA of 1976 was passed to establish policy for managing BLM-administered public lands, including the long-term stability and use of BLM-administered public lands by the livestock industry. The FLPMA authorized 10-year grazing permits and required a 2-year notice of cancellation. The FLPMA also directed grazing advisory boards (formed under the Taylor Grazing Act) to guide the BLM in developing allotment management plans and allocating range betterment funds.

Unlike the Taylor Grazing Act, the FLPMA does not distinguish between grazing permits and leases. In Sections 401 through 403 of the FLPMA, which deals with grazing management on the public lands, the term “permit or lease” appears over 25 times together and never as only “permit” or “lease.” The clear intent of Congress is that BLM’s grazing administration on all public lands be consistent for both permits and leases.

The BLM’s grazing regulations were changed in July 1978 to eliminate separate sections addressing administration of Section 3 permits and Section 15 leases. This made the regulations consistent with the language of the FLPMA in that no distinction is made between permits and leases.

BLM’s Bishop field office manages 20 allotments within the County. Of those allotments, 19 are actively used. Two are split between Inyo and Mono Counties. BLM’s Ridgecrest field office manages 6.5 allotments within the County. All of the allotments are actively being used by cattle leases. One of the allotments is split between Inyo and Mono Counties.

State Regulations

California Department of Conservation, Division of Land Resource Protection

California Public Resources Code Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP). The Department of Conservation applies the NRCS soil classifications to identify designated agricultural lands. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and monitor the conversion of these lands. Pursuant to the FMMP, designated agricultural lands are included in Important Farmland Maps used in planning for California’s agricultural land resources. No land within Inyo County has been identified as Important Farmland under the FMMP. Because of budget constraints and the lack of published soil surveys, potentially important farmlands in Inyo County have not been identified.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Section 51200-51297.4, and is applicable to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments.

The Williamson Act program is administered by the Department of Conservation in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period within which no conversion out of agricultural use is permitted. Each year, the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. Participation in the Williamson Act program is dependent on County adoption and implementation of the program, and is voluntary for landowners. Inyo County does not currently offer a Williamson Act Program.

<u>California Public Resource Code</u>

The California Public Resources Code governs forestry, forests, and forest resources within the state. "Forest land" is defined by Public Resources Code Section 12220(g) as "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." Timberland is defined by Public Resources Code Section 4526 as "land, other than land owned by the federal government..., which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."

<u>California Government Code</u>

Chapter 6.7 of the California Government Code (Sections 51100–51155) regulates timberlands within the state. A timberland production zone is defined in Section 51104(g) as an area that has been zoned pursuant to Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. In this context, "compatible uses" include any use that "does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber" (Government Code Section 51104(h)).

Local Plans and Policies

<u>Inyo County/Los Angeles Long Term Water Agreement</u>

In 1991, the County and LADWP entered into the Agreement with the overall goal to manage the water resources within Inyo County (LADWP 2010). The Agreement contains vegetation management goals and principles, and identifies those areas by classification. One of the primary goals of the Agreement is to manage Owens Valley groundwater and surface water resources to avoid significant decreases in the live cover of groundwater dependent vegetation (management Types B, C, and D), to avoid a change of a significant amount of such vegetation from one management type to vegetation of another management type which precedes it alphabetically, and to avoid other significant adverse effects in Owens Valley. The vegetation conditions documented during the 1984 to 1987 vegetation inventory serve as the base for comparison for determining whether decreases and changes have occurred.

The Agreement provides that groundwater pumping and surface water management would be conducted in a matter that would avoid significant decreases and changes in vegetation from conditions that existing during the 1981-1982 runoff year or significant decreases in water-dependent recreational uses and wildlife habitat. Thus, land owned by LADWP that is currently irrigated or supplied with water will continue to be irrigated or supplied with water in the future. Type E classification is comprised of areas where water is provided to City-owned lands for uses including alfalfa production, pasture, recreation uses, wildlife habitats, livestock, and enhancement/mitigation projects. Approximately 18,830 acres are classified as Type E in the Owens Valley. In accordance with the Agreement, LADWP is committed to supplying these lands with water and converting cultivated lands to non-irrigated land uses may be considered a significant impact as outlined in the Agreement and must be reviewed by the Inyo/Los Angeles Technical Group. Although Type A vegetation would not be affected by groundwater pumping or by changes in surface water management practices, it is monitored for such effects.

<u>1997 Memorandum of Understanding</u>

An MOU was established in 1997 between LADWP, Inyo County, CDFW, SLC, the Sierra Club and the Owens Valley Committee to provide for resolution of conflict over the LORP and other provisions of LADWP’s 1991 EIR. The MOU emphasizes the need to maintain sustainable levels of agriculture and livestock grazing in the valley.

<u>Owens Valley Land Management Plan</u>

The OVLMP is a resource management guide for LADWP-owned non-urban lands in Inyo County, excluding the LORP area. The Final OVLMP was released in April 2010. The OVLMP provides a framework for implementing management prescriptions through time, monitoring resources, and adaptively managing changed land and water conditions. A primary aspect of the OVLMP is grazing management aimed at implementing sustainable practices, balancing agricultural needs and other resource needs based on the carrying capacity of the land. Grazing management has been implemented through a series of LADWP-administered grazing leases to private parties. The OVLMP planning area falls within the Laws and Owens Lake SEDA, and the OVSA,

<u>Inyo County General Plan</u>

The General Plan (2001, as amended) contains policies intended to protect and promote agricultural pursuits within its jurisdiction. The Land Use Element defines the general distribution and intensity of uses of the land for housing, business, industry, open space, education, public buildings and grounds, and other categories of public and private uses, including agriculture. The Conservation/Open Space Element presents goals, policies, and implementation measures for multiple resources in the County, including agricultural resources. The agricultural goals and policies that are contained within the General Plan are listed below.

Government Element

- Goal GOV-6: Preservation of Agricultural Resources.

- Policy GOV-6.1: Agricultural Policies. It is the policy of the County to protect agricultural land and promote the continuation of agricultural pursuits. The County seeks to ensure all of the following:

    a. Those opportunities for agriculture on federal and state land shall be continued, or expanded at levels consistent with historical custom and culture and the protection of equitable property rights, and sound management practices.
    b. Federal and state governments shall not unreasonably obstruct agricultural opportunities on lands managed by them.
    c. Federal and state land managing agencies coordinate with the County on all matters affecting agriculture on all federal and state managed lands.
    d. Land leased from Los Angeles for agriculture be expanded.

Conservation/Open Space Element

- Goal S-1: Maintain the productivity of Inyo County's soils.

- Policy S-1.1: Soil Conservation for Agriculture. Encourage the conservation of agricultural soils to provide a base for agricultural productivity and the County's economy.

- Goal AG-1: Provide and maintain a viable and diverse agricultural industry in Inyo County.

- Policy AG-1.2: Continue Agricultural Production. Support and encourage continued agricultural production activities in the County.

- Policy AG-1.4: Minimize Land Conflict. Preserve and protect agricultural lands from encroachment by incompatible land uses.

- Policy AG-1.6: Public Lands for Agriculture. Support the continued use and expansion of public lands for agricultural operations.

<u>Inyo County Zoning Ordinance</u>

ICC Title 18 contains the County's Zoning Ordinance, which provides the regulations and laws that define how properties subject to County jurisdiction can be used. The Open Space zoning allows agricultural and livestock uses. The Rural Residential zoning allows agricultural uses of orchards, and vegetable and field crops. The Commercial Recreation zoning allows agricultural and grazing, and the Light Industrial zoning allows agriculture uses of any kind, excluding feedlots, poultry ranches, or slaughterhouses.

4.2.2 Significance Thresholds

The following significance criteria are derived from Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would result in a significant impact related to agriculture and forestry resources if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forest land (PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or forestland to non-forest use.

4.2.3 Impact Analysis

The REGPA is designed to minimize impacts to agricultural and forestry resources by constraining renewable energy development in the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact sensitive agricultural and forestry resources.

The impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the visual environment due the potential size and expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation, and community scale, facilities. The proposed REGPA includes provision for development of small scale solar energy facilities; however, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for potential environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific level to assess specific impacts to agricultural and forestry resources against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for individual projects, as well as any additional mitigation or design measures identified in the project-specific analysis for the project.

Convert Farmland to non-agricultural use.

Due to budget constraints and lack of published soil surveys, no Prime or Unique Farmlands or Farmlands of Statewide Importance pursuant to the FMMP have been identified in Inyo County. As a result, implementation of the REGPA would have no impact on Farmlands as defined by the FMMP. However, as outlined in the General Plan, the County is committed to promoting and conserving agricultural lands (including those used for grazing). Although no FMMP Farmlands are designated in the County, the County plans to coordinate with NRCS to identify Farmlands pursuant to the FMMP and identify Farmlands of Local Importance (typically 40-acre minimum areas identified by the County as important to the local economy) (Inyo County 2001, as amended).

Identifying Farmlands pursuant to the FMMP and developing the Farmlands of Local Importance program as stated in the General Plan would allow the County to establish a criterion for determining a level of significance, and developing a mitigation program can be valuable as a tool for protecting specific farmland properties. If, pursuant to the General Plan, FMMP Farmlands or Farmlands of Local Importance (Farmlands) are identified in the County, impacts to those resources as a result of solar developments under the REGPA would result in a potentially significant impact. Additional investigations are necessary to determine the presence of Farmlands in the County, and the potential for impacts as a result of implementing the REGPA.

The County also considers the use of any agricultural lands used for crop or livestock production, or apiary operations to for solar development to result in a potentially significant impact. These lands may include lands currently identified as agricultural land use in the General Plan, grazing allotments managed by the BLM, and LADWP owned lands maintained for agricultural purposes or grazing leases.

Solar facilities are developed with an established duration for operation, and would be decommissioned pursuant to an approved project-specific decommissioning and reclamation plan. As described in Section 3.3.6.2, excavated top soils would be stockpiled for subsequent use in site reclamation. As a result, in the instances that existing agricultural land uses are substituted for solar developments under the REGPA, the site would be reclaimed and could be used for agricultural uses following decommissioning. Therefore, the implementation of the project design features involving site decommissioning and reclamation would prevent a permanent loss of valuable farmlands through project site restoration. However, due to the long duration of solar projects, the long term substitution of agricultural lands to solar development could result in a significant impact. As previously described, additional investigations are necessary to determine the presence of Farmlands in the County, and the potential for impacts related to the long term substitution of Farmlands to solar development as a result of implementing the REGPA. If present, impacts to Farmlands could result in a significant impact.

The County strives to conserve and promote agricultural land uses within its boundaries. The General Plan contains goals (GOV-6.1 and AG-1) and associated policies related to preserving agricultural resources and providing and maintaining agricultural industry in the County. Future development under the REGPA would be subject to these goals and policies. Additionally, the REGPA includes a modification to an existing agricultural resources policy (Policy AG-1.3) which encourages avoidance of the use of productive agricultural lands for renewable energy solar facility development. With implementation of these goals and policies, impacts related to use of agricultural lands for solar development would be minimized.

Consistent with the County's goals and policies to conserve and promote agricultural land uses in the county, the County Agricultural Commissioner routinely reviews development proposals adjacent to agricultural operations to ensure they do not significantly impact agricultural operations. To ensure implementation, this process is included as Mitigation Measure AG-1. Refer to Mitigation Measure AG-1 for the County's required application review process related to agricultural resources, and Mitigation Measure AG-2 for measures to avoid, minimize, and mitigate for those impacts.

Conflict with existing zoning for agricultural use or a Williamson Act contract.

Inyo County does not support a Williamson Act program; therefore, the proposed project would result in no impact related to a Williamson Act contract. The Inyo County Zoning Code (ICC Title 18) identifies that areas zoned open space (OS), rural residential (RR), commercial recreation (C-5), and light industrial (M-2) are allowed to be used for agricultural uses, but it does not specifically permit renewable energy production. Areas within the SEDAs are largely zoned OS and are in grazing allotment. Other zonings are associated with the City of Bishop and unincorporated communities throughout the SEDAs and the OVSA. As described under impact AG-1, future projects under the REGPA may involve converting existing agricultural lands to solar facilities.

The proposed REGPA includes new land use policies (Policies LU-1.17 and LU-1.18), which indicate that utility scale, distributed generation, and community scale solar energy facilities shall be considered in any zoning district under Title 18 of the Inyo County Code. Therefore, because implementation of the REGPA would allow solar development on all land use designations, a potential land use conflict would occur because lands zoned for potential agricultural use may be used for solar development. This would be considered a potentially significant impact; however, all future development of solar facilities under the REGPA would be implemented consistent with Goal AG-1 of the Conservation/Open Space Element. Although the Zoning Code allows agricultural land uses under certain zoning designations, it does not contain areas specifically zoned for agricultural land uses, and those zoning designations allowing agricultural land uses may not be suitable for agricultural land uses. The REGPA would not result in a significant impact to zoning for agricultural land uses.

Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

The proposed SEDAs are not zoned for forest land, timberland, or timberland production. Therefore, there would be no conflict with, or cause for, rezoning of forest land or timberland and, as a result, no impact would occur.

Loss of forest land or conversion of forest land to non-forest use.

Lands within the SEDAs and the OVSA do not meet the PRC Section 12220(g) definition of forest land as land that can support ten percent native tree cover of any species under natural conditions. Therefore, the proposed project would not result in the loss or conversion of forest land to non-forest use, and no impact would occur.

Changes in the existing environment which, due to their location or nature, would result in conversion of agricultural lands to non-agricultural use or forest land to non-forest land.

As described above, lands within the SEDAs and the OVSA do not meet the PRC Section 12220(g) definition of forest land as land that can support 10 percent native tree cover of any species under natural conditions. Therefore, the proposed project would not result in changes to the existing environment which would result in conversion of forest lands to non-forest land.

Implementation of the REGPA would not result in the conversion of forest land to non-forest use because neither use exists within the SEDAs or Owens Valley Study Area. However, future development under the REGPA could convert existing agricultural lands to solar facilities. A potentially significant indirect impact to an agricultural resource would occur if future solar developments under the REGPA would result in compatibility conflicts with existing agricultural activities that would result in conversion of Farmland of Statewide or Local Importance to non-agricultural use. Adverse impacts may include but not be limited to: damage to equipment, crops, and livestock; introduction and establishment of non-native invasive plant species, introduction of pollutants entering farm water sources, competition for water, development affecting groundwater recharge, soil erosion and stormwater runoff, honeybee forage reduction, and shading of crops from inappropriate buffering.

The type of agricultural use and the type of solar development being proposed are key considerations in determining agricultural compatibility. All construction, operations, and maintenance activities would be limited to within the right-of-way for the proposed project, and would not result in damaged equipment, crops, or livestock on adjacent properties through trespass. Operations of solar facilities are generally considered to be compatible with adjacent livestock grazing and bee-keeping.

Based on aerial interpretation of the agricultural land use designation, the Laws SEDA, Rose Valley SEDA, Sandy Valley SEDA, and the OVSA contain croplands. Depending on the solar technology being installed, operational water use could be substantial and significantly affect groundwater supplies and/or surface water quality. Refer to Section 4.9 for a discussion of potential impacts to groundwater and surface water resulting from development in the Laws, Rose Valley, and Sandy Valley SEDAs and the OVSA. With implementation of Mitigation Measures HYD-1 through HYD-3, impacts to surface water quality, hydrologic conditions, soil erosion and stormwater runoff, groundwater resources and long-term water quality would be reduced to a less than significant impact.

Crop shading from adjacent structures may affect crop productivity and viability. Utility scale solar developments may have solar fields or other structures up to 30 feet high, depending on the angle of the panels. Solar thermal power towers may reach hundreds of feet in height. Although there is a possibility for off-site shading, it would occur in any given location for only a small portion of the day and impacts would be less than significant.

The conversion of lands from native plant communities or other types of rangeland to solar facilities can reduce both the forage quantity as well as species diversity of a site. This can reduce the forage value of an area to nearby commercial honeybee staging sites. Additionally, the construction and operation of future solar facilities has the potential to provide conditions conducive to non-native invasive plant species introduction and establishment. Construction sites often bring equipment and materials from outside sources, providing opportunities for the introduction and spread of invasive plants. Many invasive plants establish more effectively in areas that are disturbed. Once established, these invasive plants can be difficult to control, exclude beneficial native plant species, and disperse onto nearby agricultural lands reducing the forage quality of rangelands or affecting crop production. Impacts to forage values of agricultural lands and other operations, and the introduction and spread of invasive species is considered potentially significant. The County Agricultural Commissioner routinely reviews development proposals adjacent to agricultural operations to ensure they do not significantly impact agricultural operations. To ensure implementation, this process is included as Mitigation Measure AG-1. Refer to Mitigation Measures AG-1 and AG-2 to minimize impacts related to land use conflicts. Mitigation Measure AG-3 addresses the introduction and spread of noxious weeds.

4.2.4 Level of Significance before Mitigation

No significant impacts to forestry resources would occur with implementation of the REGPA. Based on the analysis in Section 4.2.3, future utility scale, distributed generation, and community scale solar energy projects under the REGPA could result in potentially significant impacts related to the direct and indirect the conversion of agricultural resources to non-agricultural land uses. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to agricultural resources when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA. Small scale projects are typically considered to result in no impacts under CEQA.

4.2.5 Mitigation Measures

Agricultural resources mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to agricultural resources located within the SEDAs. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the additional mitigation measures shall be determined based on the professional judgment of a qualified County planner, pursuant to ICC Title 21 and State CEQA

Guidelines. For example, community scale solar developments (i.e., roof-top or ground mounted PV panels for a specific community's use) may be determined by the Agricultural Commissioner to have no potential impact on agricultural resources and would not require implementation of the additional mitigation measures contained in this section. In such cases, the County shall document that no impacts to agricultural resources would occur and no mitigation measures are necessary in lieu of the agricultural resources evaluation required in Mitigation Measure AG-2.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact agricultural resources, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo county review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified County planner.

As described above, implementation of the REGPA could result in conversion of agricultural resources to non-agricultural land uses. In order to ensure minimal impacts resulting from the direct or indirect conversion of agricultural resources in the County, the following mitigation measures will be implemented:

MM AG-1: Review development proposals for potential impacts to agricultural operations.

The County Agricultural Commissioner shall be responsible for reviewing new development proposals adjacent to agricultural operations to ensure they do not significantly impact agricultural operations.

MM AG-2: Conduct site specific investigations for agricultural lands.

Site-specific agricultural resource investigations shall be completed for proposed solar development projects within the individual SEDAs and the OVSA that are located on lands utilized for agricultural operations prior to final project design approval. If agricultural operations are identified within the project area, alternative designs should be implemented to avoid and/or minimize impacts to those resources. This may include mitigating conversion of agricultural lands based on the mitigation ratios identified in consultation with affected agencies at the cost of the project applicant to the satisfaction of the County. Mitigation ratios and impact fees assessed, if any, shall be outlined in the Renewable Energy Development Agreement, Renewable Energy Permit, or Renewable Energy Impact Determination.

4.2.5.1 MM AG-3: Invasive plant species or noxious weeds.

To prevent the introduction and spread of noxious weeds, a project-specific integrated weed management plan shall be developed for approval by the permitting agencies, which would be carried out during all phases of the project. The plan shall include the following measures, at a minimum, to prevent the establishment, spread, and propagation of noxious weeds:

- The area of vegetation and/or ground disturbance shall be limited to the absolute minimum and motorized ingress and egress shall be limited to defined routes.
- Project vehicles shall be stored onsite in designated areas to minimize the need for multiple washings of vehicles that re-enter the project site.
- Vehicle wash and inspection stations shall be maintained onsite and the types of materials brought onto the site shall be closely monitored.
- The tires and undercarriage of vehicles entering or re-entering the project site shall be thoroughly cleaned.
- Native vegetation shall be re-established as quickly as practicable on disturbed sites.
- Weed Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions.
- Use certified weed-free straw, hay bales, or equivalent for sediment barrier installations.

4.2.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.2.5, all identified project-related impacts associated with Farmlands would be avoided or reduced below a level of significance with no significant unavoidable adverse impacts.

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4.3 AIR QUALITY

This section discusses potential impacts to air quality resulting from the implementation of the proposed project. Information and analysis in this section have been compiled based on an understanding of the existing ambient air quality and review of existing technical data, applicable laws, regulations, and guidelines.

4.3.1 Existing Conditions

The project is located in Inyo County, which is part of the Great Basin Valleys Air Basin (Basin). The Basin is named for its geological formation of valleys surrounded by mountains. Air rises and sinks in the Basin due to the heat in the valleys and height of the mountains that causes the air and its pollutants to settle in the valleys and basins. The Basin also includes Alpine and Mono Counties. Areas within the Basin are under the jurisdiction of the GBUAPCD, which regulates air pollutant emissions for all stationary sources within the Basin.

4.3.1.1 Climate

The variable climate of the Basin is determined by its diverse terrain and geographic location. The climate of the region is greatly influenced by the Sierra Nevada and is generally semi-arid to arid, characterized by low precipitation, abundant sunshine, frequent winds, moderate to low humidity, and high potential for evapotranspiration.

The average minimum winter temperature is in the high 20 degrees Fahrenheit (°F), while the average maximum summer temperature is in the mid- to high 70°F. Most precipitation occurs between November and February. Spring is the windiest season, with fast-moving northerly weather fronts. During the day, southerly winds result from the strong solar heating of the nearby mountain slopes, causing upslope circulation. Summer winds are northerly at night as a result of cool air draining from higher to lower elevations.

4.3.1.2 Criteria Air Pollutants

Air quality regulations were first promulgated with the Federal Clean Air Act (CAA) of 1970. Air quality is defined by ambient air concentrations of seven criteria air pollutants, which are a group of common air pollutants identified by the USEPA to be of concern with respect to the health and welfare of the general public. Federal and state governments regulate criteria air pollutants by using ambient standards based on criteria regarding the health and/or environmental effects of each pollutant. The criteria pollutants are defined as follows: nitrogen dioxide (NO_2), ozone (O_3), particulate matter (including both particulate matter with a diameter of 10 microns or less [PM_{10}] and a diameter of 2.5 microns or less [$PM_{2.5}$]), carbon monoxide (CO), sulfur dioxide (SO_2), and lead. The state and federal air quality standards for the criteria pollutants are provided in Table 4.3-1.

Table 4.3-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone	1-Hour	0.09 ppm ($180 \mu g/m^3$)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm ($137 \mu g/m^3$)		0.075 ppm ($147 \mu g/m^3$)		
Respirable Particulate Matter (PM_{10})	24-Hour	$50 \mu g/m^3$	Gravimetric or Beta Attenuation	$150 \mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	$20 \mu g/m^3$		-		
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	-	-	$35 \mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	$12 \mu g/m^3$	Gravimetric or Beta Attenuation	$12 \mu g/m^3$		
Carbon Monoxide (CO)	1-Hour	20 ppm ($23 mg/m^3$)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm ($40 mg/m^3$	-	Non-Dispersive Infrared Photometry (NDIR)-
	8-Hour	9.0 ppm ($10 mg/m^3$)		9 ppm ($10 mg/m^3$)	-	
	8-Hour (Lake Tahoe)	6 ppm ($7 mg/m^3$)		-	-	
Nitrogen Dioxide (NO_2)[9]	1-Hour	0.18 ppm ($339 \mu g/m^3$)	Gas Phase Chemiluminescence	0.100 ppm ($188 \mu g/m^3$)	-	Gas Phase Chemilumi-nescence
	Annual Arithmetic Mean	0.030 ppm ($57 \mu g/m^3$)		0.053 ppm ($100 \mu g/m^3$)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1-Hour	0.25 ppm ($655 \mu g/m^3$)	Ultraviolet Fluorescence	75 ppb ($196 \mu g/m^{3)}$	-	Ultraviolet Fluorescence; Spectro-photometry (Pararo-saniline Method
	3-Hour	-		-	0.5 ppm ($1300 \mu g/m^3$)	
	24-Hour	0.04 ppm ($105 \mu g/m^3$)		0.14 ppm ($365 \mu g/m^3$) (for certain areas)[9]	-	
	Annual Arithmetic Mean	-		0.030 ppm ($80 \mu g/m^3$) (for certain areas)[9]	-	
Lead[11,12]	30-Day Average	$1.5 \mu g/m^3$	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		$1.5 \mu g/m^3$	Same as Primary Standard	
	Rolling 3-Month Average	-		$0.15 \mu g/m^3$		
Visibility Reducing Particles[13]	8-Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	**No Federal Standards**		
Sulfates	24-Hour	$25 \mu g/m^3$	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm ($42 \mu g/m^3$)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24-Hour	0.01 ppm ($26 \mu g/m^3$)	Gas Chromatography			

Footnotes on next page

Notes for Table 4.3-1:

Source: CARB 2013

mg/m^3 = milligrams per cubic meter; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

[1] California standards for ozone, CO (except Lake Tahoe), SO_2 (1- and 24-hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the CCR.

[2] National standards (other than ozone, PM, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[8] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[9] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 and 0.100 ppm, respectively.

[10] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-hour average of the annual 99^{th} percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards have are approved.

[11] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[12] The national standard for Pb was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[13] In 1989, the CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 20-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Ambient air quality refers to the atmospheric concentration of a specific compound (amount of pollutants in a specified volume of air) that occurs at a particular geographic location. The ambient air quality levels measured at a particular location are determined by the interactions of emissions, meteorology, and chemistry. Emission considerations include the types, amounts, and locations of pollutants emitted into the atmosphere. Meteorological considerations include wind and precipitation patterns affecting the distribution, dilution, and removal of pollutant emissions. Chemical reactions can transform pollutant emissions into other chemical substances. Ambient air quality data are generally reported as a mass per unit volume (e.g., micrograms per cubic meter of air) or as a volume fraction (e.g., parts per million [ppm] by volume).

Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. Primary pollutants, such as CO, SO_2, lead, and some particulates, are emitted directly into the atmosphere from emission sources. Secondary pollutants, such as O_3, NO_2, and some particulates, are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes. PM_{10} and $PM_{2.5}$ are generated as primary pollutants by various mechanical processes (e.g., abrasion, erosion, mixing, or atomization) or combustion processes. However, PM_{10} and $PM_{2.5}$ can also be formed as secondary pollutants through chemical reactions or by gaseous pollutants condensing into fine aerosols.

4.3.1.3 Toxic Air Contaminants

Toxic air contaminants (TAC) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than the criteria pollutants previously discussed because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. In addition, diesel soot causes a reduction in visibility.

4.3.1.4 Local Air Quality

An area is designated in attainment when it is in compliance with the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). These standards are set by the USEPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The criteria pollutants of primary concern that are considered in this section include O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_X, they are important as precursors to O_3.

The Basin is a federal nonattainment area for PM_{10}, as shown in Table 4.3-2. The primary source of PM_{10} emissions in the County is from the dry Owens Lakebed. Therefore, the State of California is required to prepare and update State Implementation Plans (SIPs) for this pollutant. The SIPs comprise individual plans prepared by the agencies responsible for air quality management in each nonattainment area. In the Basin, the GBUAPCD is the responsible agency and the plan to attain the federal PM_{10} standard is the *2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan*.

Table 4.3-2
GREAT BASIN VALLEYS AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Attainment/Unclassified	Nonattainment
CO	Attainment/Unclassified	Attainment
PM_{10}	Serious Nonattainment*	Nonattainment
$PM_{2.5}$	Attainment/Unclassified	Attainment
NO_2	Attainment/Unclassified	Attainment
SO_2	Unclassified	Attainment
Lead	Attainment/Unclassified	Attainment

Source: CARB 2014a
*Nonattainment area is the Owens Valley PM_{10} Planning Area

Although Inyo County is categorized as nonattainment for the state ozone standard, there is no ozone implementation plan, nor is one required under state law. According to the CARB Ozone Transport Review, which is a statewide assessment of ozone transport between air basins, ozone levels would improve in the Basin only when substantial mitigation measures are more fully implemented in upwind air basins.

Monitoring Data

Criteria air pollutant concentrations are currently measured at 15 monitoring stations in the Basin. The only station in the County that monitors ozone is the Death Valley National Park monitoring station, which is located in the eastern portion of the County. Similarly, the only station in the County that monitors $PM_{2.5}$ is the Keeler monitoring station, which is in the central portion of the County and is located at 190 Cerro Gordo Road. Of the 15 monitoring stations in the County, 14 stations monitor PM_{10}. The northern most monitoring station is the Bishop-Line station, also known as the White Mountain Research Station, and the southernmost monitoring station is the Coso Junction-US 395 station. Table 4.3-3 shows pollutant levels at each applicable station. PM_{10} levels are shown for three monitoring stations that represent conditions in the northern, central, and southern portions of the County.

Table 4.3-3
BACKGROUND CONCENTRATIONS AT INYO COUNTY MONITORING STATION

Air Pollutant	2011	2012	2013	Monitoring Station
Ozone				
Max 1-hour (ppm) Days > CAAQS (0.09 ppm)	0.084 0	0.082 0	0.080 0	Death Valley National Monument
Max 8-hour (ppm) Days > NAAQS (0.075 ppm) Days > CAAQS (0.070 ppm)	0.079 3 20	0.078 1 8	0.074 0 5	Death Valley National Monument
Particulate Matter (PM_{10})				
Max Daily (µg/m^3) Days > NAAQS (150 µg/m^3)	261.0 4	136.0 0	325.0 3	Bishop-Line
Max Daily (µg/m^3) Days > NAAQS (150 µg/m^3)	13,380.0 9	571.0 4	392.0 8	Keeler-Cerro Gordo Road
Max Daily (µg/m^3) Days > NAAQS (150 µg/m^3)	219.0 3	173.0 1	162.0 2	Coso Junction-US 395 Rest Area
Particulate Matter ($PM_{2.5}$)				
Max Daily (µg/m^3) Days > NAAQS (35 µg/m^3)	208.0 9	99.0 4	93.6 8	Keeler-Cerro Gordo Road

Source: CARB 2014b
> = exceeding; ppm = parts per million; µg/m^3 = micrograms per cubic meter;
Standard Mean = Annual Arithmetic Mean

4.3.1.5 Sensitive Receptors

Sensitive receptors are people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The County is located in an Isolated Rural area. As such, the County has a relatively small population, with the majority of people living in small communities along US 395. Existing sensitive receptors in each SEDA and the OVSA are discussed below.

Western Solar Energy Group

Laws Solar Energy Development Area

Existing sensitive receptors within the Laws SEDA include some residences within the Laws community, as well as a group of residences along the northern border of the County approximately one mile east of US 6. There are no hospitals or other non-residence sensitive receptors within the Laws SEDA.

Owens Lake Solar Energy Development Area

Existing sensitive receptors within the Owens Lake SEDA include residences within the Keeler community, as well as residences within a quarter mile outside of the Owens Lake SEDA boundary in the community of Cartago. There are no hospitals or other non-residence sensitive receptors within the Owens Lake SEDA.

Rose Valley Solar Energy Development Area

Existing sensitive receptors within the Rose Valley SEDA include scattered residences primarily along US 395. Existing residences are also located within a quarter mile outside of the Rose Valley SEDA boundary. Relative to the boundary, residences are located to the northwest, between the communities of Grant and Olancha, and to the west, in the northern portion of the SEDA near Sage Flats Road and in the southern portion of the SEDA west of Sykes. There are no hospitals or other non-residence sensitive receptors within the Rose Valley SEDA.

Pearsonville Solar Energy Development Area

Existing sensitive receptors within the Pearsonville SEDA include some residences along US 395 in the community of Pearsonville. There are no hospitals or other non-residence sensitive receptors within the Pearsonville SEDA.

Owens Valley Study Area

Existing sensitive receptors within the OVSA include residences, schools, hospitals, and recreation areas. The majority of sensitive receptors are located within the City of Bishop and the communities of (north to south) West Bishop, Wilkerson, Big Pine, Independence, Lone Pine, and Alabama Hills. However, existing residences are also scattered throughout the OVSA in less populated areas. Additionally, some existing residences are located within a quarter mile of the OVSA boundary; these include residences within the Laws community and a few residences west of the Alabama Hills community.

Southern Solar Energy Group

Trona Solar Energy Development Area

Existing sensitive receptors within the Trona SEDA include a few residences west of Trona Wildrose Road. Existing residences are also located within a quarter mile outside of the Trona SEDA boundary. These residences are located to the south of the SEDA and west of Trona

Road, in the Pioneer Point community of San Bernardino County. There are no hospitals or other non-residence sensitive receptors within the Trona SEDA.

Eastern Solar Energy Group

<u>Chicago Valley Solar Energy Development Area</u>

Existing sensitive receptors within the Chicago Valley SEDA include a few residences east of Chicago Valley Road approximately 0.5 mile north of the southern SEDA boundary. There are no hospitals or other non-residence sensitive receptors within the Chicago Valley SEDA.

<u>Charleston View Solar Energy Development Area</u>

Existing sensitive receptors within the Charleston View SEDA include residences to the north and south of Tecopa Road. A few residences are also located across the California-Nevada state line and within a quarter mile outside of the SEDA boundary. There are no hospitals or other non-residence sensitive receptors within the Charleston View SEDA.

<u>Sandy Valley Solar Energy Development Area</u>

Existing sensitive receptors within the Sandy Valley SEDA include a few residences associated with local agriculture. Within a quarter mile outside of the SEDA boundary, existing sensitive receptors include some Nevada residences and a Clark County park, named Peace Park, which contains the Sandy Valley Senior Center. There are no other sensitive receptors within the Sandy Valley SEDA.

4.3.1.6 Regulatory Framework

Federal Regulations

The CAA of 1970 and the CAA Amendments of 1971 required the USEPA to establish NAAQS. The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The CAA requires the USEPA to reassess the NAAQS at least every five years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States retain the option to adopt more stringent standards or to include other specific pollutants.

As part of its enforcement responsibilities, the USEPA requires each state with federal nonattainment areas to prepare and submit a SIP that demonstrates the means to attain and maintain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution by using a combination of performance standards and market-based programs within the SIP-identified timeframe.

State Regulations

The CARB, a part of CalEPA, has established the California Clean Air Act and is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to primary and secondary ambient air quality standards, California has established a set of episode criteria for O_3, CO, NO_2, SO_2, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health.

Local Regulations

The GBUAPCD enforces regulations and administers permits governing stationary sources by limiting emissions of criteria air pollutants and TACs. The GBUAPCD has adopted rules and regulations that regulate visible emissions, nuisance emissions, and fugitive dust emissions. The following rules would apply to the project:

- Rules 200-A and 200-B. Permits Required: Before any individual builds or operates anything which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants, such person must obtain a written authority to construct and permit to operate from an Air Pollution Control Officer.

- Rules 401 and 402. Fugitive Dust and Nuisance: Rule 401 requires that airborne particles remain at their place of origin under normal wind circumstances. Mitigation techniques, approved by the GBUAPCD must be implemented to ensure the containment of fugitive dust. Rule 401 does not apply to emissions discharged through a stack (point source). Rule 402 specifies that any discharge from any source in quantities of air contaminants or other materials which may cause injury, detriment, nuisance or annoyance, or damage to any public property or considerable number of people should be regulated.

<u>Regional Comprehensive Plan</u>

The Basin is identified as an Isolated Rural area, which means that its emissions are not part of an emissions analysis of any metropolitan planning area or plan. Thus, there is no regional plan to guide growth and transportation in the area.

<u>Inyo County General Plan</u>

Air Quality is addressed within the Public Safety Element of the General Plan 92001, as amended). Section 9.2, Air Quality, of the Public Safety Element contains the following goals and policies to protect air quality in the County:

- Goal AQ-1: Provide good air quality for Inyo County to reduce impacts to human health and the economy.

- Policy AQ-1.1: Regulations to Reduce PM_{10}. Support the implementation of the SIP and the agreement between GBUAPCD and the LADWP to reduce PM_{10}.

- Policy AQ-1.2: Attainment Programs. Participate in the GBUAPCD's attainment programs.

- Policy AQ-1.3: Dust Suppression During Construction. Require dust-suppression measures for grading activities.
- Policy AQ-1.4: Energy Conservation. Encourage the use of energy-conservation devices in public and private buildings.
- Policy AQ-1.5: Monitor Regional Development. Publicly object to development proposals within the region that do not adequately address and mitigate air quality impacts, especially fugitive dust.

4.3.2 Significance Thresholds

The impact analysis provided below is based on the application of the following State CEQA Guidelines Appendix G thresholds of significance, which indicate that a project would have a significant impact if it would:

- Conflict with or obstruct implementation of any applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

Neither Inyo County nor the GBUAPCD have established numerical significance thresholds for quantitatively determining air quality impacts. CEQA, however, allows lead agencies to rely on standards or thresholds promulgated by other agencies. The GBUAPCD has allowed use of the numerical standards of the Mojave Desert Air Quality Management District (MDAQMD) in prior CEQA reviews. Because the air quality and pollutant attainment status in portions of the Mojave Desert Air Basin (MDAB) are similar to those of the Basin, the numerical thresholds set for MDAB are considered adequate to serve as significance thresholds for the proposed project.

4.3.2.1 Construction Emissions

The GBUAPCD considers short-term construction equipment exhaust emissions to be less than significant. However, since the air basin is within the Owens Valley PM_{10} Planning Area, fugitive dust emissions from construction must be mitigated. Therefore, construction emissions, including TAC emissions from construction activities, are evaluated qualitatively in the context of the significance thresholds identified below.

4.3.2.2 Operational Emissions

Project operations would have a significant impact to air quality if operational emissions from both direct and indirect sources exceed any of the threshold levels identified in Table 4.3-4. For nonattainment pollutants, if emissions exceed the thresholds shown in the table, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

Table 4.3-4
AIR POLLUTANT SIGNIFICANCE THRESHOLDS

Pollutant	Significance Thresholds (pounds per day)
VOC	137
NO_X	137
CO	548
SO_X	137
PM_{10}	82
$PM_{2.5}$	82

Source: MDAQMD 2009

4.3.3 Impact Analysis

The REGPA is designed to minimize impacts to air quality by constraining renewable energy development in the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact air quality resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the ambient environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to air quality against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the air quality analysis conducted for the project.

Air quality is largely a regional issue, rather than a site-specific issue. As such, it is not necessary to discuss each SEDA and the OVSA individually for every air quality issue area. The following impact analysis has therefore been separated into discussions for each SEDA and the OVSA only when deemed appropriate.

4.3.3.1 Conformance to Applicable Air Quality Plans

Pursuant to the CAA, the GBUAPCD is required to reduce emissions of criteria pollutants for which the Basin is in nonattainment. Because Inyo County is a nonattainment area for PM_{10}, activities resulting from the proposed project may be subject to emission control strategies contained within the OVSA PM_{10} SIP.

The project proposes new General Plan policies and implementation measures to encourage and direct the type, siting, and size of future renewable energy development within the County. Several of the proposed policies and measures would directly support and/or strengthen the existing air quality goals, policies, and measures within the General Plan, as shown below.

New Mineral and Energy Resources Policy

3. Policy MER-2.7: Dust Control. The County shall work with renewable energy solar developers to ensure that dust creation during the construction and operations of a renewable energy solar facility are avoided to the extent practicable.

New Mineral and Energy Resources Implementation Measures

7. Work with applicants to maintain pre-project vegetation during the construction and operation of renewable energy solar facilities and/or to plant new native, low-water-use vegetation, or agriculture crops as dust control measures.

8. Encourage the use of new materials and technologies as they evolve for dust control measures.

New Air Quality Implementation Measure

1. Support appropriate efforts to combine air quality improvements with other social, cultural, and environmental goals, including renewable energy solar facility development.

The proposed policies and implementation measures would support the reduction of fugitive dust, would be consistent with the existing General Plan, and would support the objectives of the Owens Valley Planning Area PM_{10} SIP. Therefore, construction and operation of the project would not obstruct implementation of the SIP and impacts would be less than significant.

4.3.3.2 Conformance to Federal and State Ambient Air Quality Standards

Implementation of the proposed project would result in the development of large-scale solar energy projects. These types of projects have the potential to result in impacts associated with construction and operational emissions. Emissions would be dependent on construction activities and are not site-specific. Because construction activities would be similar for each SEDA and the OVSA, these areas are not discussed individually.

Construction Impacts

Construction of solar developments would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment and off-site trucks hauling construction materials, including water to the site. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. Fugitive dust emissions would primarily result from site preparation and road construction activities. NO_X and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Construction would generally consist of several phases including site preparation, development of staging areas and site access roads, solar tracker array assembly and installation, and potentially construction of electrical transmission facilities. Site preparation would include clearing and grubbing of sparse vegetation from areas of the site that would be utilized for project development. Grading activities would be required associated with road construction.

Construction traffic would primarily include the delivery of construction equipment, vehicles, and materials including concrete and possibly water; and daily construction worker trips. The majority of the equipment (e.g., solar panels, trackers, etc.) would likely be delivered to project sites in standard width and length covered vans or flatbed trailers. Projects may require travel over unpaved roads. Equipment, materials, and labor would likely come from the Inyo County area; however, it is possible that some equipment, materials, and labor would need to come from outside areas due to the rural nature of Inyo County. Emissions would vary based on the length of travel, with higher emissions associated with longer trips.

Overall, construction of solar developments would require similar equipment and construction activities. Construction activities would be temporary and short-term in nature and would vary day to day depending on the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, tracker installation). Smaller developments would require less overall water use (both on-site and imported sources) for dust control purposes, and would have a shorter overall construction schedule, and therefore, total annual emissions would be lower. However, daily construction efforts and equipment would be similar to that of a larger development.

Construction-related dust is addressed in GBUAPCD Rule 401 and 402. With implementation of Mitigation Measures AQ-1 through AQ-3, which will ensure compliance with GBUAPCD Rules 401 and 402 through dust control measures, fugitive dust would be minimized. However, emissions of fugitive PM_{10} can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Because details regarding individual solar projects are unknown at this time, project-specific analyses will be necessary to ensure that potential emissions associated with construction comply with the daily emission thresholds. Therefore, impacts would be considered potentially significant.

Operational Impacts

The operation of solar developments would result in emissions from worker vehicles, personnel transport vehicles, panel washing equipment, and service trucks during operation and maintenance. Emissions would be dependent on the size of solar development and the associated number of operation and maintenance personnel. Typically, solar developments do not require a substantial number of operation and maintenance personnel and associated emissions are relatively low.

Solar developments could, however, result in a reduction of fugitive dust. Tests using wind tunnels have shown that, when properly aligned (perpendicular to primary wind directions), solar arrays can work effectively as a dust control measure by blocking wind and dust. The use of wind deflectors can enhance this effect by lifting winds that may otherwise flow beneath panels. The LADWP is currently exploring this option on the Owens Dry Lake with a solar demonstration project of 500 kW (anticipated to be completed before the end of 2014). If proven effective, solar developments throughout the SEDAs and the OVSA could assist in the reduction of PM_{10} concentrations throughout the Basin and would thereby support the Basin in becoming an attainment area for PM_{10}.

Although solar facilities could result in reduced dust emissions, their effectiveness would be dependent on a site-specific design. Because details regarding the design of individual solar projects are unknown at this time, project-specific analyses will be necessary to ensure that potential emissions associated with operation comply with the daily emission thresholds. As such, impacts would be considered potentially significant.

4.3.3.3 Cumulatively Considerable Net Increase of Criteria Pollutants

Construction Impacts

As discussed previously, implementation of the proposed project would result in the temporary addition of pollutants to the local airshed caused by construction activities of numerous potential solar developments. New general plan policies and implementation measures included in the proposed project would support the reduction of emissions; however, if construction activities result in an exceedance of daily thresholds for PM_{10} or O_3 precursors, the project would result in a cumulatively considerable net increase in criteria pollutants.

The extent to which all reasonably foreseeable cumulative projects and the proposed project would result in significant cumulative impacts depends on their proximity and construction schedules. Although maximum daily construction pollutant impacts could contribute to a cumulatively considerable impact associated with PM_{10} emissions during construction activities, impacts would be temporary, localized to the project site and would not be emitted over long distances. Following completion of project construction, all construction-related criteria pollutant impacts would cease. Accordingly, generation of PM_{10} emissions when combined with other cumulative projects, particularly those occurring nearby and simultaneously, would result in a potentially significant temporary cumulative impact to air quality.

Operational Impacts

Operation of the solar projects associated with implementation of the proposed REGPA is not anticipated to result in a substantial increase in vehicular or stationary emissions once installed. As a result, long-term NO_X, VOC, and PM_{10} emissions resulting from project operations are anticipated to be below applicable thresholds. Further, implementation of the REGPA would reduce region-wide emissions by promoting facilities that generate energy from sustainable sources, such as solar, which are not dependent combustion of fossil fuels to supply energy needs for the region. Therefore, the project would not contribute to a cumulatively considerable net increase in nonattainment pollutants during operation and impacts would be less than significant.

4.3.3.4 Impacts to Sensitive Receptors

As discussed in Section 3.1, existing sensitive receptors are located throughout the SEDAs and the OVSA; however, the majority of the land within these locations is undeveloped.

Carbon Monoxide

<u>Construction Impacts</u>

CO emissions are the result of the combustion process and therefore primarily associated with mobile source emissions (vehicles). Implementation of the proposed project would potentially result CO emissions related to trips from daily construction workers, initial delivery of construction equipment and vehicles, and phased delivery of construction materials including solar panels. Some construction deliveries could require oversized transport vehicles that travel at slower speeds and intrude into adjacent travel lanes. Construction-related traffic is not anticipated to substantially increase congestion of nearby roadway intersections near sensitive receptors due to the intermittent and temporary nature of construction traffic. Thus, construction-related traffic is not expected to cause an exceedance of the CO CAAQS. Impacts would be less than significant.

<u>Operational Impacts</u>

CO concentrations tend to be higher in urban areas where there are many mobile-source emissions. The proposed project is located in an isolated rural area and development of solar farms is not anticipated to occur directly adjacent to more densely populated areas. Operational traffic volumes related to maintenance activities would be negligible and is anticipated to have a negligible effect on the congestion of nearby roadway intersections.

Furthermore, vehicle emissions are anticipated to decrease in future years due to vehicle fleets continuing to turnover and more stringent vehicle emissions control standards coming into effect. Therefore, the operation of the proposed project would not expose sensitive receptors to substantially high concentrations of CO or contribute traffic volumes to intersections that would result in an exceedance of the CO CAAQS; therefore, this impact would be less than significant.

Toxic Air Contaminants – Diesel Particulate Matter

Construction Impacts

Construction would result in the generation of DPM emissions from the use of off-road diesel construction equipment required for mass site grading and earthmoving, trenching, asphalt paving, and other construction activities. Other construction-related sources of DPM include material delivery trucks and construction worker vehicles. However, not all construction worker vehicles would be diesel-fueled and most DPM emissions associated with material delivery trucks and construction worker vehicles would occur off site.

The State of California determined that DPM from diesel-fueled engines poses a chronic health risk with long-term inhalation exposure. The risks associated with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure (i.e., 24 hours per day, 7 days per week, 365 days per year for 70 years). Because generation of DPM from construction projects typically occur in a single area for a short period of time, construction emissions of diesel exhaust is not expected to result in long-term chronic lifetime exposure to diesel exhaust from heavy duty diesel equipment. Therefore, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs and impacts would be less than significant.

Operational Impacts

Solar farm operation, maintenance, and inspection generally require minimal use of diesel trucks and use of emergency generators. Thus, operations would not generate any major operational sources of TAC or DPM, and impacts would be less than significant.

4.3.3.5 Odor Impacts

Construction Impacts

Construction would result in the emission of diesel fumes and other odors typically associated with construction activities. Odors from these sources would be localized and generally confined to the immediate area surrounding the construction site. These compounds would be emitted in varying amounts on the site depending on where construction activities are occurring, number and types of construction activities occurring, and prevailing weather conditions, among other factors. Projects would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and impacts would be less than significant.

Operational Impacts

Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. PV panels associated with solar array equipment would not generate objectionable odors during operation and maintenance of the facility. Operations would consist of standard service and personnel vehicles which would visit the site regularly during inspection, maintenance, and washing activities. Therefore, operation of the proposed project would not create objectionable odors affecting a substantial number of people, and impacts would be less than significant.

4.3.4 Level of Significance before Mitigation

Based on the analyses in Section 4.3.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to: (1) daily threshold exceedances during construction activities; (2) daily threshold exceedances during operations; and (3) cumulatively considerable net increase in criteria pollutants during construction activities. These impacts require mitigation to reduce them to the maximum extent feasible. Small-scale projects are typically considered to result in no impacts under CEQA.

4.3.5 Mitigation Measures

Air quality mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to air quality. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on air quality and would not require a project-specific air quality evaluation or implementation of the mitigation measures listed in this section. In such cases, the County shall document that no impacts to air quality will occur and no mitigation measures are necessary in lieu of the air quality evaluation required in Mitigation Measure AQ-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact air quality, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

The following mitigation measures would reduce emissions of criteria pollutants during construction and operation of projects developed under the REGPA.

MM AQ-1: Prepare site-specific air quality technical report.

Prior to issuance of Major Use Permits for solar energy projects, a site-specific air quality technical report shall be prepared and approved by the County, which will verify compliance with County and GBUAPCD standards during construction and operation of the solar project.

Mitigation Measures AQ-2 and AQ-3, as defined below, will be incorporated into the site-specific technical report, and will be implemented during construction and operation of future projects. These measures require implementation of dust control practices during construction activities and solar project operations.

MM AQ-2: Reduce fugitive dust and particulate matter emissions during construction.

To control emissions of particulate matter, and to ensure compliance with GBUAPCD Rules 401 and 402 as well as applicable BMPs from REAT's Best Management Practices and Guidance Manual (REAT 2010), solar projects shall implement fugitive dust and particulate matter emissions control measures including, but not limited to the following:

- Water and/or coarse rock all active construction areas as necessary and indicated by soil and air conditions;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard;
- Pave or apply (non-toxic) soil stabilizers on all unpaved access roads;
- Sweep daily (with water sweepers) all paved access roads;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Suspend excavation and grading activity when sustained winds make reasonable dust control difficult to implement, e.g., for winds over 25 miles per hour (mph).
- Limit the speed of on-site vehicles to 15 mph.

MM AQ-3: Implement dust control measures during operation.

To control emissions of particulate matter, and to ensure compliance with GBUAPCD Rules 401 and 402 as well as applicable BMPs from REAT's Best Management Practices and Guidance Manual (REAT 2010), solar projects shall incorporate feasible dust control measures into the site design including, but not limited to, the following:

- Incorporate wind deflectors intermittently across solar project sites;
- Orient infrastructure/solar panels perpendicular to primary wind directions; and
- Adjust panel operating angles to reduce wind speeds under panels.

4.3.6 Significant Unavoidable Adverse Impacts

Based on the implementation of Mitigation Measures AQ-1 through AQ-3, all identified project-related impacts associated with air quality would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

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4.4 BIOLOGICAL RESOURCES

This section provides an overview of the existing biological conditions in the SEDAs and the OVSA, describes key regulatory concerns related to biological resources, describes potential impacts to biological resources, and provides mitigation measures for those potential impacts. The analysis of potential impacts to biological resources relies on a desktop review of available special status species data as well as spatial data from various sources used to determine habitat characteristics and to determine special status species and sensitive habitats with the potential to occur in the SEDAs and OVSA and/or be impacted by solar development in those areas.

This PEIR has been prepared at the program level to assess and document the broad environmental impacts of potential future solar development in the SEDAs and OVSA with the understanding that a more detailed site specific environmental review is required to evaluate future development projects implemented under the REGPA. Thus, this PEIR does not conclusively determine whether or not federally or state listed plant or animal species or waters of the US are present within the SEDAs and OVSA. Further site-specific biological studies and, if necessary, consultation with the appropriate agencies would be required prior to any future solar energy development.

4.4.1 Existing Conditions

4.4.1.1 Environmental Setting

Due to its varied topography and landforms, the County supports a geographically diverse setting with a variety of associated habitats. The majority of the County falls within the Mojave Desert floristic province, including areas of the County south of Owens Valley and east of the White Mountains. The Rose Valley, Pearsonville, Trona, Chicago Valley, Charleston View, and Sandy Valley SEDAs fall within the desert. The remainder of the County is characterized by the eastern Sierra Nevada and Owens Valley. The Laws and Owens Lake SEDAs and the OVSA are located within the Owens Valley.

Because the SEDAs and the OVSA encompass relatively large areas within this varied landscape, a variety of habitats and associated wildlife are likely to occur. This section provides an overview of the biological conditions in the Mojave Desert and Owens Valley as well as biological resources that may occur in the SEDAs and OVSA. Section 4.4.1.11 individually presents the biological resources with the potential to occur in each SEDA and the OVSA.

Mojave Desert

The County is located at the western edge of the Mojave Desert, which is within the Basin and Range Geologic Province. The typical basin and range topography creates the xeric conditions of this desert. In the County, the bases of low ranges and hills are comprised of alluvial fan complexes giving way to valley floors transected by complexes of ephemeral drainages and other landforms such as dunes. The mean annual precipitation in the Mojave Desert is approximately 4 to 6 inches, occurring during distinct winter and summer storm patterns. Due to the extreme conditions of the desert, vegetation cover of the Mojave Desert is typically sparse (50 percent or less cover), and is adapted to the extreme desert conditions with characteristic species such as Joshua tree (*Yucca brevifolia*), creosote bush (*Larrea tridentate*), and white bursage

(*Ambrosia dumosa*). Native annual plants, including special status plants, germinate only in response to the seasonal rain events.

Many animals of the desert are nocturnal (e.g., owls, bats) or crepuscular (e.g., burrowing owls, reptiles, insects, mammals). Large mammals are few and are represented by desert bighorn sheep (*Ovis canadensis nelsonii*) and coyote (*Canis latrans*). The majority of the wildlife are comprised of small mammals and numerous species of lizards and snakes. Common reptiles include the western side-blotched lizard (*Uta stansburiana elegans*), Great Basin whiptail (*Aspidoscelis tigris tigris*), southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), coachwhip (*Coluber flagellum*), and Great Basin gopher snake (*Pituophis catenifer deserticola*). Common small mammals include black-tailed jackrabbit (*Lepus* californicus), antelope ground squirrel (*Ammospermophilus leucurus*), and several species of kangaroo rats (*Dipodomys* spp.) and woodrats (*Neotoma* spp.).

Owens Valley

The Owens Valley is the valley of the Owens River situated within the Basin and Range Geologic Province between the Sierra Nevada to the west and the Inyo and White Mountains to the east. It is a long and relatively narrow north-south trending valley characterized by interior drainages with lakes and playas. The Owens River originates in southwestern Mono County at Big Springs and drains south to the Owens Lake. The valley floor ranges from 3,500 feet amsl near Owens Lake to 4,500 feet amsl near Bishop.

The arid conditions of the valley are attributed to the rain-shadow effect of the Sierra Nevada, which results in limited precipitation (about 5 inches per year) and xerophytic (arid-adapted) vegetation. The perennial Owens River is the main source of hydrology in the valley, providing water for irrigation and domestic uses. The natural source is runoff from precipitation from the Sierra Nevada, White and Inyo Mountains (NRCS 2002). A relatively high water table supports perennial plants such as trees and shrubs throughout the valley. Alkali meadow and shrub communities occur in high water table areas on the valley floor, while upland shrub communities occur on the alluvial fans descending from canyon mouths of the Sierra Nevada and the White and Inyo Mountains (NRCS 2002). Riparian forest and shrub communities occur along the Owens River and along streams flowing from the Sierra Nevada into the Owens Valley. At some locations in the valley, agriculture, water diversion, and cattle grazing have influenced vegetation patterns through overgrazing, reductions in the water table, and the introduction of non-native species.

The various landforms and habitats in and surrounding the valley support a wide variety of reptiles, birds, and mammals, including species endemic to the Owens River such as:

- Owens pupfish (*Cyprinodon radiosus*), federal and state listed as endangered,
- Owens tui chub (*Sipaeteles bicolor snyderi*), federal and state listed as endangered,
- Owens speckled dace (*Rhinichthys osculus*), a California Species of Special Concern, and
- Owens sucker (*Catostomus fumeiventris*), a California Species of Special Concern.

The Owens Valley checkerbloom is a plant species that is endemic to the Owens Valley. This species is state listed as endangered and BLM sensitive.

Historically, Owens Lake was a major stopover site for migrating waterfowl and shorebirds in the western US. However, due to water diversions to the Los Angeles Aqueduct, the lake has become largely dry and barren. As of 2013, the Los Angeles Owens Lake Dust Mitigation Program ponds or sheet floods approximately 41.5 square miles of the lake, and roughly 3.5 square miles are covered with native salt grass grown on a drip system (OVC 2014). These water-based dust control methods have re-introduced an Owens Lake food web for birds.

4.4.1.2 Terrestrial Vegetation Communities and Habitats

The extent of plant communities in a given area is dependent on or affected by factors such as geographical location, soils, precipitation, solar aspect, orientation of slopes, microclimates, groundwater levels, and successional stages. The following habitats were identified as occurring in the SEDAs and/or the OVSA based on land cover/land use data compiled for the California Gap Analysis Project (Davis et al. 1998). Although it is not a specific habitat type, groundwater dependent vegetation is also discussed at the end of this section. The habitat mapping is at a landscape level context to provide a broad overview of the distribution of habitats in the SEDAs and OVSA. For the purposes of this analysis, this information was used to allow general conclusions about the potential for special status species to occur based on those habitats. Habitat classification and distribution mapping would need to be conducted of project sites as specific projects are developed. The brief descriptions of the habitats provided here are adapted from *A Guide to Wildlife Habitats of California* (Mayer et al. 1998) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Figure 4.4-1 presents the locations and distribution of the plant communities discussed below.

Mojave Desert Scrub

Mojave desert scrub comprises the majority of the habitat in the County, and is associated with the extent of the Mojave Desert in the County. This habitat is well developed on valley floors and lower alluvial fans, generally found between 2,000 to 4,000 feet, but may occur at higher elevations on south-facing slopes. This habitat is typically characterized by an open composition with canopy cover less than 50 percent, with bare ground between plants. As described above under *Mojave Desert*, characteristic species are the Joshua tree (*Yucca brevifolia*) which may occur sparsely to densely, creosotebush, and white bursage. Additional dominant species include all-scale saltbush (*Atriplex polycarpa*), brittlebush (*Encelia farinosa*), desert holly (*Atriplex hymenelytra*), and white burrobush (*Ambrosia dumosa*). Cacti are well represented and include Engelmann hedgehog (*Echinocereus engelmannii*), silver cholla (*Cylindropuntia echinocarpa*), Mojave prickly pear (*Opuntia phaeacantha*), beavertail cactus (*Opuntia basilaris*), and barrel cactus (*Ferocactus* sp.). Common wildlife species are as described above under Mojave Desert.

The state and federally listed as threatened desert tortoise (*Gopherus agassizii*), and state listed as threatened desert kit fox (*Vulpes macrotis*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) occur in this habitat type.

Alkali Desert Scrub

Along with desert scrub habitat, alkali desert scrub is relatively common throughout the County-especially along dry lake beds and river floodplains-and comprises the primary habitat at mid to low elevation ranges. This habitat type may intermingle with other arid and semiarid wildlife habitats. It is typically characterized by various species of saltbush (*Atriplex* sp.) and cacti are noticeably sparse or absent. This habitat type supports various reptiles, birds and small to mid-sized animals as described above under Mojave Desert. Special status species including desert tortoise (federal and state threatened) and Mohave ground squirrel (state threatened) also use alkaline desert scrub.

Barren

Barren habitat is defined by the absence or near absence of vegetation. Habitat with less than 2 percent vegetation cover by herbaceous, desert, or non-wildland species and less than 10 percent cover by tree or shrub species is considered barren. Un-vegetated cliff and rock walls are considered barren. Desert habitats may be defined as barren when vegetation is widely spaced. Urban settings covered in pavement and buildings may be classified as barren as long as vegetation, including non-native landscaping, does not reach the percent cover thresholds for vegetated habitats.

Birds of prey, such as hawks, use barren landscapes for hunting small reptiles and small mammals. The state listed as threatened bank swallow (*Riparia riparia*) use barren vertical cliffs of friable soils along river corridors for nesting and cover. In the desert, open sandy soil is critical as burrowing and egg-laying substrate for horned and fringe-toed lizards.

Cropland

Croplands in the County are located on flat to gently rolling terrain. Climate and soils limit the type of crops grown. Typical commercial crop production in the County includes alfalfa, hay, carrots, dates, garlic, and grains. These crops are annuals and are managed in a crop rotation system. Planting times vary; however, most croplands are planted in the spring and harvested late summer and early fall.

Some wildlife have adapted to cropland as a seasonally suitable habitat –mule deer (*Odocoileus hemionus*) forage in alfalfa and grain fields and birds such as waterfowl, doves, and various raptors use croplands for forage. Swainson’s hawk (*Buteo swainsonii*; state threatened) and white tailed kites (*Elanus leucurus*; CDFW fully protected species) use croplands for forage. Burrowing owls (*Athene cunicularia*; CDFW species of concern) may use irrigation canals along croplands for burrows and fields for foraging.

Low Sagebrush

Low sagebrush communities are typically restricted to elevated arid plains along the eastern flanks of the Sierra Nevada, and in the White and Inyo Mountains. This habitat can occur at 4,000 to 9,000 feet amsl and from 8,000 to 11,000 feet in the White and Inyo Mountains. It is characterized by broad-leaved, evergreen shrubs of approximately 15 percent cover. The habitat is dominated by low sagebrush (*Artemesia arbuscula*), often in associated with rabbitbrush (*Chrysothamnus* sp.), antelope bitterbrush (*Purshia tridentata*), or big sagebrush (*Artemesia tridentata*). Utah juniper (*Juniperus osteosperma*) or western juniper (*J. occidentalis*) and singleleaf pinyon (*Pinus monophyla*) may occur as a sparse, scattered overstory. A rich variety of forbs and grasses are sparsely distributed, typically reaching 5 to 15 percent cover.

Sagebrush

Sagebrush occupies dry slopes and flats from 1,600 feet amsl to 10,500 feet amsl. It is often composed of pure stands of big sagebrush, but may stands include other species of sagebrush (*Artemesia* sp.), rabbitbrush (*Ericameria* sp.), gooseberry (*Ribes* sp.), western chokecherry, mountain mahogany (*Cercocarpus betuloides*), and antelope bitterbrush.

This habitat type is very important to wildlife partially because it provides habitat for important game animals and occupies such a vast area. It provides seasonal habitat for migratory mule deer. Typical species include jackrabbits, ground squirrels, kangaroo rats, wood rats, sagebrush vole (*Lemmiscus curtatus*), and desert bighorn sheep. Typical bird species that occupy this habitat include black-billed magpie (*Pica hudsonia*), gray flycatcher (*Empidonax wrightii*), pinyon jay (*Gymnohinus cuanocephalus*), sage thrasher (*Oreoscoptes montanus*), and various sparrows and hawks.

Pinyon-Juniper

Pinyon-juniper habitats are generally found on steep, rocky slopes with well-drained, residual or weathered soils. It occurs at middle elevations interfacing other wildlife habitats such as desert scrub at low elevations. At low to mid elevations, this habitat may be characterized by dense stands of trees in undisturbed sites to smaller, further spaced trees in drier sites. Species composition ranges from pure stands of pinyon, either singleleaf or Parry, to stands of pinyon mixed with juniper, oaks (*Quercus* sp.), or Mojave yucca (*Yucca mojavensis*). Characteristic understory species include interior goldenbush (*Ericameria linearifolia*), big sagebrush, common snakeweed (*Gutierrezia sarothrae*), rubber rabbitbrush (*Ericameria nauseosus*), blackbrush (*Coleogyne ramosissima*), and various grasses and forbs.

Urban/Developed

Urban or developed lands are areas of intensive use with much of the land covered by structures. This includes cities, transportation, power and communications facilities, residences, mills, shopping centers, industrial and commercial complexes, and institutions that may by isolated from urban areas. Agricultural land, forest, wetland, or water areas on the fringe of urban or developed areas are not included in this category except where they are surrounded and dominated by urban development.

Groundwater Dependent Vegetation

Groundwater dependent vegetation communities require access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements. Groundwater dependent vegetation communities in the Owens Valley include akali meadow, alkali (desert) scrub, and alkali sink. These vegetation communities occur in areas with saline soil and shallow groundwater. Alkali meadow communities are among the most distinctive vegetation communities in the Owens Valley and are comprised of a wide range of annual and perennial grasses and forbs in addition to perennial shrubs. In areas where the groundwater table has been lowered due to pumping, alkali meadow vegetation is vulnerable to conversion to alkali scrub, which occurs in areas with a slightly lower water table than alkali meadow and is dominated by perennial shrubs with lower diversity of perennial grasses and forbs. Alkali scrub communities are vulnerable to conversion to shrub dominated communities when the water table is lowered due to pumping and lose the diversity of grasses and forbs. Alkali sink is unique because the soil surface is relatively impermeable and subject to ponding. Alkali sink habitats are characterized by depressions in the micro-topography that pond water after rains surrounded by slightly higher areas that support perennial grasses and shrubs.

4.4.1.3 Aquatic Vegetation Communities and Habitats

Aquatic vegetation communities and habitats are important for their roles in habitat biodiversity, water quality, and aquatic ecology. These habitats are typically considered sensitive habitats and may also be subject to federal and/or state regulation as waters of the US and/or waters of the State. CDFW regulates project impacts to certain vegetation communities associated with aquatic habitats, such as riparian corridors. The following habitats were identified as occurring in the SEDAs and/or the OVSA based on land cover/land use data compiled for the California Gap Analysis Project (Davis et al. 1998). Figure 4.4-1 presents the locations and distribution of the plant communities discussed below.

Desert Riparian

Desert riparian habitats may be characterized by dense groves of low, shrub-like trees or tall shrubs to woodlands of small to medium sized trees. These habitats are found adjacent to permanent surface water such as streams and springs, and seeps. Usually an abrupt transition occurs between this habitat and adjacent desert habitats. These habitats generally are found at elevations less than 3,000 feet amsl; however, desert riparian habitats comprised of willow thickets may be found at higher elevations.

The dominant canopy species of desert riparian habitats vary – overstory species may include tamarisk, mesquite, Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), velvet ash (*Fraxinus velutina*), and western sycamore. The understory includes smaller individuals of the canopy species as well as smaller, shrubby species such as mule fat (*Baccharis salicifolia*). These relatively rare habitats are of critical importance to wildlife and support a diversity of birds and other wildlife species.

Montane Riparian

Montane riparian habitats are found usually below 2,400 feet amsl in the Sierra Nevada. This habitat typically occurs as a narrow, dense grove of broad-leaved, winter deciduous trees up to approximately 100 feet in height with a sparse understory. Characteristic species in the Sierra Nevada include alder (*Alnus* sp.), quaking aspen (*Populus tremuloides*), black cottonwood (*Populus trichocarpa*), dogwood (*Cornus* sp.), willow (*Salix* sp.) water birch (*Betula occidentalis*), and Fremont cottonwood.

The range of wildlife that uses montane riparian habitat for food, cover, and reproduction include amphibians, reptiles, birds, and mammals. The state listed as threatened Sierra Nevada red fox (*Vulpes vulpes necator*) is among the special status species that use this habitat.

Fresh Emergent Wetland

Fresh emergent wetlands are found at all elevations in permanently or periodically inundated basins as well as depressions associated with terrestrial or aquatic habitats. This habitat is characterized by erect, rooted herbaceous hydrophytic plants, the composition of which is dependent on the hydrology. On the upper margins of fresh emergent wetlands, saturated or periodically flooded soils support several moist soil plant species such as big leaf sedge (*Carex amplifolia*), Baltic rush (*Juncus balticus*), and saltgrass (*Distichlis spicata*) on alkaline sites. On wetter sites, common cattail (*Typha* sp.), tule (*Schoenoplectus* sp.), and arrowhead (*Sagittaria* sp.) are potential dominant species. Fresh emergent wetlands are among the most productive wildlife habitats in California. Various aquatic and semi aquatic species of amphibians and reptiles are dependent on freshwater emergent wetlands.

Lacustrine

Lacustrine habitats may occur in association with any terrestrial habitat, or riverine or freshwater emergent wetlands, but are less abundant in arid regions. Typical lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes (e.g., playas), and ponds (including vernal pools) so shallow that rooted plants can grow over the bottom. Suspended organisms such as plankton are found in the open water of lacustrine habitats. The plants and animals found depend on the water depth, with floating plants increasing as sedimentation and accumulation of organic matter increases towards the shore. Lacustrine habitats are used by a variety of mammals, birds, reptiles, and amphibians for reproduction, food, water and cover. The state listed as endangered bald eagle (*Haliaeetus leucocephalus*) feeds on fish and birds taken from lakes.

4.4.1.4 Special Status Natural Communities

Special status natural communities are vegetation communities of limited distribution statewide or within a county or region and are often vulnerable to the environmental effects of projects. The communities may or may not contain special status species or their habitat. CDFW's *List of California Terrestrial Natural Communities* (CDFW 2010) presents the natural communities and their degree of imperilment by global and state ranking. The following habitat descriptions are adapted from *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009). Refer to Figure 4.4-2 for the locations of sensitive habitats in the County. Special status natural communities identified by CDFW as occurring within the SEDAs or OVSA are described here.

Active Desert Dunes

Active desert dunes habitat has a conservation status global ranking of apparently secure (G4), and a state ranking of threatened (S2.2). Active desert dunes are barren expanses of actively moving sand whose size and shape are determined by abiotic site factors rather than by stabilizing vegetation. Characteristic species include fewleaf bee plant (*Cleome sparsifolia),* desert dicoria (*Dicoria canescens*), California evening primrose (*Oenothera californica* ssp. *avita*), and fanleaf crinklemat (*Tiquilia plicata)*.

Alkali Meadow

Alkali meadow habitat has a conservation status global ranking of vulnerable (G3) and a state ranking of very threatened (S2.1). Alkali meadows are characterized by dense to fairly open growth of perennial grasses and sedges on more or less permanently moist alkaline soils. This habitat type may intergrade with a variety of habitats also occurring on alkaline soils. The habitat usually features low-growing species, but may support species reaching 1 meter in height (e.g., alkali sacaton; *Sporobolus airoides*). Characteristic species include yerba mansa (*Anemopsis californic*a), various sedges (*Carex* spp.) and rushes (*Juncus* spp.), *Cordylanthus mollis hispidus*, saltgrass (*Distichlis spicata*), and scratchgrass (*Muhlenbergia asperifolia*).

Alkali Seep

Alkali seep habitat has a conservation status global ranking of vulnerable (G3) and a state ranking of very threatened (S2.1). Alkali seeps are often associated with alkali meadows, and are characterized by low-growing perennial herbs, usually forming relatively complete cover. Characteristic species include saltgrass, marine water nymph (*Najas marina*), and western nitrophila (*Nitrophila occidentalis*).

Mesquite Bosque

Mesquite bosque habitat has a conservation status global ranking of vulnerable (G3) and a state ranking of very threatened (S2.1). This habitat is an open to fairly dense, drought-deciduous streamside thorn forest dominated by velvet mesquite (*Prosopis pubescens*) with open understories maintained by frequent flooding or fire. This habitat often occurs on higher alluvial terraces away from perennial streams that support cottonwood-willow riparian forests. It is associated with washes, streambanks, alkali sinks or outwash plains with substantial near-surface groundwater supplies. Characteristic species include elderberry (*Sambucus mexicana*), various species of saltbush (e.g., *Atriplex canescens*, *A. lentiformis*, *A. polycarpa*), creosotebush, and desert thorn (*Lycium* spp.). This habitat is extremely restricted in California.

Transmontane Alkali Marsh

Transmontane alkali marsh habitat has a conservation status global ranking of vulnerable (G3) and a state ranking of very threatened (S2.1). This habitat is characterized by dense vegetation dominated by perennial, emergent, herbaceous plants such as cattails, rushes, and sedges, reaching 2 meters tall. This habitat varies from other alkali marsh habitats in that its growing season occurs in the summer and the winter dormancy is absolute. Winter temperatures are often well below freezing. This habitat type occurs at elevations 3,000 to 7,000 feet amsl along lake beds, margins of springs and river bottoms. Characteristic species include various sedges and rushes, bulrush (*Scirpus* sp.), saltgrass, western nitrophila, and cattails (*Typha domingensis*, and *T. latifolia*).

Water Birch Riparian Scrub

Water birch riparian scrub is not assigned a global or state conservation rank, but is listed in the CNDDB as a sensitive natural habitat. This habitat is typically a dense stand of shrubs or small trees along intermittently, seasonally, temporarily flooded, or saturated stream banks, alluvial terraces, and seeps. This habitat requires permanently flowing water during the growing season. The water birch is a dominant or co-dominant in the tall shrub or small tree canopy with boxelder (*Acer negundo*), alder (*Alnus* spp.), black sage, western dogwood (*Cornus sericea*), Fremont's cottonwood, aspen, black cottonwood (*P. trichocarpa*), and various willows.

4.4.1.5 Protected Natural Areas

Protected natural areas in the County include public conservation lands managed by federal, state, and regional agencies, and private lands managed as preserves. Figure 4.4-3 shows the locations of protected natural areas in the County and the jurisdiction of those areas. These areas provide habitat for native plants and animals as well as recreational opportunities and aesthetic value. The protected lands in the County are presented below.

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC) is a conservation ecology program administered by the BLM. It is a specific, legally defined, BLM designation where special management is needed to protect and prevent irreparable damage to important historical, cultural, scenic values, fish and wildlife, and natural resources or to protect life and safety from natural hazards. Designated critical habitat and ACEC boundaries generally, but not always coincide along legal boundaries. ACECs have special site-specific management prescriptions in order to protect the specific resource for which the ACEC was designated. Development on ACECs may be allowed if such development does not impact the resource for which the ACEC was designated.

Approximately 20 areas designated as ACEC are located throughout the County. Although the OVSA and Rose Valley SEDA contain ACEC designated lands within their boundaries, only one ACEC designated area is established for biological resources. The Fish Slough ACEC is located in the OVSA along Fish Slough near the northern County border (BLM 2000). This ACEC is associated with critical habitat for the federally listed as threatened Fish Slough milk-vetch.

Special Management Areas

Desert Wildlife Management Areas (DWMA) are administrative areas in which recovery efforts for species of conservation concern are focused. These areas are managed such that reserve-level protection is afforded the population of the species while maintaining and protecting other special status species and ecosystem functions (e.g., watersheds).

The Mohave ground squirrel is a target species of conservation concern for the BLM. Conservation and management planning for the Mohave ground squirrel has been ongoing under the West Mojave Plan (BLM 2005) through efforts by the BLM, CDFW and other entities. The West Mojave Plan establishes Mohave ground squirrel Conservation Areas on non-military public and private lands for the long-term survival and protection of the species. In the County, Conservation Areas includes an area in the southwest section of the County from west of Pearsonville, north to and surrounding Haiwee, and east to, and surrounding Darwin, and an area in the south center of the County that surrounds Homewood Canyon and Valley Wells. The West Mojave Plan limits ground disturbance to 1 percent of existing habitat within the Mohave ground squirrel Conservation Area (BLM 2000). It applies to both public and privately held lands and all projects regardless of size within the Conservation Area. The Rose Valley SEDA falls nearly entirely within Mohave ground squirrel Conservation Area, and the Owens Lake SEDA contains a small area of Conservation Area along its south eastern boundary. Conservation Areas border the Pearsonville and Trona SEDAs.

Ecological Reserve

The County contains areas that have been set aside in perpetuity to preserve functioning natural ecosystems, act as refuges for species, and to maintain ecological processes. Reserves in the California ecological reserve system are primarily the responsibility of the CDFW, although CDFW may partner with other agencies, universities, non-profit organizations, and the public to achieve management goals of mutual interest. These reserves are located throughout the County, and include the Fish Slough Ecological Reserve, Saline Valley Ecological Reserve, and the Indian Joe Spring Ecological Reserve.

The Fish Slough Ecological Reserve is located within the OVSA. This reserve is an approximately 190-acre reserve administered by CDFW and the BLM, near the County border with Mono County.

State Wildlife Management Areas

State Wildlife Management Areas are lands administered by the CDFW to protect and enhance habitat for wildlife species and to provide for wildlife-associated public uses. The lands may be owned by the state or may be managed under agreements with other public agencies. These areas provide habitat for a variety of plant and animals species, including many listed as threatened or endangered. Management methods of the wildlife areas depend on the resources and purpose of the area.

State Wildlife Management Areas in the County include the Cartago Wildlife Area, which partially falls within the Owens Lake SEDA. This wildlife area is approximately 218 acres in size, and is located along the southwestern shore of Owens Lake, approximately 0.5 mile east of US 395. The wildlife area is characterized by freshwater wetland and springs that provide habitat for waterfowl, wading birds and shorebirds including western snowy plovers, white-faced ibis, and rails. The area is open for waterfowl, dove, quail, and rabbit hunting, and provides opportunities for bird watching and photography.

US Wilderness Areas

US Wilderness Areas are lands where development is prohibited by law. Four federal agencies administer the Wilderness Areas: the USFS, NPS, BLM, and USFWS. A majority of the land in the County is designated as Wilderness Area, with an approximate total of 6,278 square miles, or 61 percent of the County's total land area. The SEDAs have been located to avoid Wilderness Areas in the County; however, several of the SEDAs abut and/or are surrounded by Wilderness Areas.

Wilderness Study Areas

The BLM manages 530 Wilderness Study Areas containing almost 12.8 million acres located in the western states and Alaska. The FLPMA of 1976 directed the BLM to inventory and study its roadless areas for wilderness characteristics. To be designated as a Wilderness Study Area, an area had to have the following characteristics:

- Size – roadless areas of at least 5,000 acres of public lands or of a manageable size;
- Naturalness – generally appears to have been affected primarily by the forces of nature;
- Opportunities – provides outstanding opportunities for solitude or primitive and unconfined types of recreation.

In addition, Wilderness Study Areas often have special qualities such as ecological, geological, educational, historical, scientific and scenic values.

The congressionally directed inventory and study of BLM's roadless areas received extensive public input and participation. By November 1980, the BLM had completed field inventories and designated about 25 million acres of Wilderness Study Areas. Since 1980, Congress has reviewed some of these areas and has designated some as wilderness and released others for non-wilderness uses. Until Congress makes a final determination on a Wilderness Study Areas, the BLM manages these areas to preserve their suitability for designation as wilderness.

No Wilderness Study Areas occur within any of the SEDAs. However, several Wilderness Study Areas occur within the OVSA as well as in close proximity to the Owens Lake, Laws, and Trona SEDAs.

4.4.1.6 Habitat Connectivity and Wildlife Corridors

Habitat fragmentation is the isolation of blocks of habitat by altering the habitat between these habitat blocks, thereby affecting wildlife movement between habitat blocks and possibly resulting in isolated populations of species. Wildlife corridors are components of the landscape that connect large blocks of natural open space and facilitate the movement of animals and ecological processes between these natural areas. Wildlife corridors contribute to population viability by allowing continual exchange of genes between populations, providing access to adjacent habitat areas for life processes, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires). Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

The County is largely undeveloped and contains large blocks of protected natural areas and various landforms. The Sierra Nevada, Owens River, and various mountain ranges and valleys in the County provide critical habitat opportunities on a County-wide and regional scale. Birds are likely to migrate longitudinally through the Owens Valley, between water bodies. Large mammals, such as Lone Pine tule elk (*Cervus elaphus nannodes*) and bighorn sheep (*Orvis canadensis nevadensis*) would be likely to disperse between mountain ranges. Maintaining connectivity between those habitat blocks is important for wildlife movement and life functions in the County and region. Human development, particular land uses and physical structures may affect or impede wildlife movement patterns. Transportation corridors through the Owens Valley pose existing barriers to terrestrial wildlife travelling regionally between the Sierra Nevada and ranges to the east, and locally within the valley. Roads in the valley and throughout the County vary in the degree to which they are barriers to wildlife – roadways with greater traffic volumes, higher speeds, and a high number of lanes (e.g., US 395) would result in a greater barrier to wildlife than infrequently used, single or two-lane roadways with reduced speeds. Additional land uses and structures affecting wildlife movement and uses include fencing, off-highway vehicle use, residential and urban development, agricultural and grazing land uses.

The landscapes of the SEDAs and the OVSA are generally flat or gentle slopes, in undeveloped areas with limited constraints. SEDAs in the Western Solar Energy Group and the OVSA are located between mountain ranges, and all SEDAs are located between habitat blocks in the County. Typical wildlife species expected to move through the SEDAs and OVSA include mule deer, mountain lion, coyote, small mammals, reptiles, and birds. Birds and flying insects would be able to move freely over the sites, while the terrestrial species would be more constrained by the existing land uses of the individual site. Wildlife movement would be expected to be largely concentrated within drainages and along ridgelines. Some species require greater cover for movement, and some species use areas with the least resistance (e.g., less expenditure of energy) such as dirt roads and game trails as long as the associated risks are low. Agricultural areas, wetlands, and bodies of water are expected to attract wildlife, including migrating birds. Refer to Figure 4.4-4 for a map of the landscape blocks in the County and connectivity between those areas.

Essential Habitat Connectivity and Missing Links

The 2010 California Essential Habitat Connectivity Project has produced a statewide map of natural landscape blocks, areas considered to be essential connectivity areas between the blocks, and locations of interstate connections as priority movement corridors for California's wildlife (Spencer et al. 2010). This project incorporates linkages from the 2001 Missing Links in California's Landscape Project (Penrod et al. 2001), federally-designated critical habitat, and relevant maps and data produced by other conservation planning efforts throughout California.

Pacific Flyway

The Pacific Flyway is a major north-south flyway for migratory birds extending from the North Slope of Alaska to Central and South America. Every year migratory birds travel some or all of this distance in spring and fall. There are many key rest stops where birds of many species gather, sometimes in the millions, to feed and regain their strength before continuing. Some species may remain for the entire season, and some may move on after only a few days. Resources such as water bodies along these flyways are of utmost importance to the migratory birds. Water bodies in the Owens Valley are key rest stops for migratory birds along the Pacific Flyway.

Important Bird Areas

The National Audubon Society has designated areas recognized as being essential habitat for the conservation of bird populations for breeding, wintering, and migrating birds. These Important Bird Areas are expected to attract resident and migrating birds for their habitat features and value. Important Bird Areas occur in the study area including Owens Lake and North Haiwee Reservoir.

Desert Tortoise Priority Connectivity Areas

The USFWS Desert Tortoise Recovery Office has implemented landscape-scale modeling to identify priority habitat linkages between and among desert tortoise conservation areas identified in the Desert Tortoise Recovery Plan (USFWS 2011). These connectivity areas are rated based on their priority to conserving the species connectivity within its range. Priority 1 linkages are areas that have the best chance of sustaining connectivity for desert tortoise populations based on habitat modeling performed by the USGS (Nussear et al. 2009). Priority 2 lands are blocks of lands identified as having the highest habitat potential (USFWS unpubl.). Figure 4.4-4 depicts Priority 1 and 2 desert tortoise priority connectivity areas in the County.

4.4.1.7 Noxious Weeds

A noxious weed is defined as a plant that could displace native plants and natural habitats, affect the quality of forage on rangelands, or affect cropland productivity. The California Department of Food and Agriculture (CDFA) lists weeds and assigns ratings (A – D, or Q), to each species on the list. The ratings reflect CDFA's view of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The rating system is explained below:

A. An organism of known economic importance, one whose distribution allows for the possibility of successful eradication or successful containment. A-rated pests are prohibited from entering the state and may only enter if permitted by the CDFA and USDA. If found in the state, they are subject to State (or the County's Agricultural Commissioner, when acting as a state agent) enforced action involving eradication, quarantine, rejection, or other holding action.

B. A pest of known economic or environmental detriment and, if present in California, it is of limited distribution. B-rated pests are eligible to enter the state if the receiving county has agreed to accept them. If found in the state, they are subject to state endorsed holding action and eradication only to provide for containment, as when found in a nursery. At the discretion of the individual county agricultural commissioner they are subject to eradication, containment, suppression, control, or other holding action.

C. A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments. If found in the state, they are subject to regulations designed to retard spread or to suppress at the discretion of the individual county agricultural commissioner. There is no state enforced action other than providing for pest cleanliness.

D. An organism known to be of little or no economic or environmental detriment, to have an extremely low likelihood of weediness, or is known to be a parasite or predator. There is no state enforced action.

Q. An organism or disorder suspected to be of economic or environmental detriment, but whose status is uncertain because of incomplete identification or inadequate information.

Because target weeds would differ widely from project to project, depending on the sensitivity of the site to infestation, the nature of the proposed project, and the type of weeds in the immediate area, noxious weeds were not evaluated in detail for this program level analysis. The environmental review process for future solar development projects under this PEIR would involve a qualified botanist developing a target list of noxious weeds that present a risk to the specific project area. The target list would include all A-rated weed species, as well as B- and C-rated species of concern to the County. Other weeds considered to be of concern to the County would also be included in the list.

4.4.1.8 Special Status Species

Special status species are plants and animals that are legally protected under the federal and California Endangered Species Acts (FESA and CESA, respectively) or other regulations, and species that are considered rare by the scientific community, such as the California Native Plant Society (CNPS).

Species were considered to be special status if they met one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under FESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 50 CFR 17.11 [listed animals], 67 FR 40657 [candidate species], and various notices in the Federal Register [FR] [proposed species]);

- Listed or candidates for listing by the state of California as threatened or endangered under CESA, (Fish and Game Code § 2050 *et seq.*);

- Listed as rare under the California Native Plant Protection Act (Fish and Game Code § 1900 et seq.);

- Meets the definition of rare or endangered under CEQA (CEQA, § 15380(b) and (d)).

- Species considered by CNPS to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2). Only CNPS Lists 1 and 2 are considered to be "special status" species because of their higher sensitivity to impacts.

- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA § 15125 (c)) or is so designated in local or regional plans, policies, or ordinances

(State CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type;

- Identified by CDFW as species of concern or fully protected species, including fish and wildlife that do not have state or federal threatened or endangered status but may still be threatened with extinction (CDFW 2011);
- California Species of Special Concern (SSC), vertebrate species that have been designated as "species of special concern" by the CDFW because declining population levels, limited range, and/or continuing threats have made them vulnerable to extinction (CDFW 2011); or
- Otherwise defined as rare, threatened, or endangered under the CEQA.
- Species identified as "sensitive" by the BLM (BLM 2010; 2013).

The term "special status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, protected species under MBTA Section 10 are afforded avoidance and minimization measures per federal and state requirements.

The BLM maintains lists of special status species found on public lands administered by the BLM (BLM 2010; 2013). The SEDAs and the OVSA overlap BLM managed land; therefore, the County will consider BLM sensitive species while planning development on BLM administered lands in the SEDAs or OVSA.

The DRECP contains a list of 77 species proposed for regulatory coverage under the DRECP (Covered Species) within its plan area. These species may or may not have state or federal listing status, but are considered special status species within the DRECP plan area regardless. The majority of SEDAs and portions of the OVSA overlap the DRECP plan area. The County may consider DRECP Covered Species when planning development within the DRECP plan area, but is not currently a signatory to the DRECP.

4.4.1.9 Critical Habitat

Critical habitat is a designation by the USFWS for areas considered to be essential to the conservation of species listed as threatened or endangered under FESA. Critical habitat for eight federally listed species is present in the County. The SEDAs have been located to avoid critical habitat; however, the OVSA contains critical habitat for the federally listed Fish Slough milk-vetch (*Astragalus lentiginosus* var. *piscinensis*) along Fish Slough at the northern end of the study area. The OVSA also contains critical habitat for western yellow-billed cuckoo (*Coccyzus americanus*) along the Owens River (Unit 5: CA-5 Owens River).

4.4.1.10 Special Status Species with the Potential to Occur in the SEDAs and the OVSA

Lists of regionally-occurring special status species with the potential to occur in the SEDAs or the OVSA were compiled from the USFWS endangered and threatened species list for the County (USFWS 2014a), spatial data (geographic information systems) of regionally-occurring special status species within each SEDA and the OVSA obtained from the California Natural Diversity Database (CNDDB; CDFW 2014), the BLM list of special status plants (2013) and list of special status animals in California (2010), and the DRECP list of covered species (Dudek et al. 2012). Additional special status species with the potential to occur were identified by reviewing publicly available documents, including the Southern Owens Valley Solar Ranch Project EIR (LADWP 2013) and the Hidden Hills Solar Electric Generating System Preliminary Staff Assessment (Watson et al. 2012). It is recognized that these lists may not be inclusive of all special status species with the potential to occur (i.e., rare plants or animals that have not previously been identified in an area have the potential to occur if suitable habitat is present); however, it was not deemed feasible or necessary to do a more comprehensive evaluation for this PEIR because site specific biological studies will be required for each individual project that obtains CEQA coverage under this PEIR. Refer to Appendix E for the species lists.

The following federally-listed species identified on the USFWS list for the County were excluded from evaluation because they do not have the potential to occur in the SEDAs or the OVSA:

- delta smelt (*Hypomesus transpacificus*),
- Central Valley steelhead (*Oncorhynchus mykiss*),
- Yosemite toad (*Bufo canorus*),
- Mountain yellow-legged frog (*Rana muscosa*),
- fisher (*Martes pennanti*),
- Paiute cutthroat trout (*Oncorhynchus clarki seleniris*), and
- Ramshaw sand verbena (*Abronia alpine*)

Perennial rivers and streams in the County are outside of the range of the federally-threatened delta smelt and federally-threatened Central Valley steelhead. Both species of fish occur in watersheds west of the crest of the Sierra Nevada. Yosemite toad (federally-threatened), Mountain yellow-legged frog (federally-endangered) and fisher (federal candidate species) are higher elevation species occurring in the Sierra Nevada (the Yosemite toad is also known from Inyo National Forest), whose ranges do not overlap the valley floors of the County where the SEDAs and OVSA are located. Paiute cutthroat trout (federally-threatened) is known from Silver King Creek and the accessible reaches of three small tributaries located on the eastern slope of the Sierra Nevada in Alpine County. The SEDAs and OVSA are outside of the range of this species and do not contain suitable habitat. Ramshaw sand verbena (federal candidate) is known from the high in the Sierra Nevada where it occurs on the granitic, gravelly margins of meadows and seeps at elevations of 7,800 to 8,900 feet amsl. The SEDAs and OVSA are outside of the elevation range of this species.

Table 4.4-1 includes all of the sensitive wildlife species identified during the desktop review described above as either being known to occur or potentially occurring in the SEDAs and the OVSA and Table 4.4-2 presents all of the rare plants identified as having the potential to occur in those areas. Further discussions of special status species with the potential to occur within each SEDA and the OVSA are presented in Section 4.4.1.10.

Table 4.4-1
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		
		Federal	State	Other*
Fish				
Catostomus fumeiventris	Owens sucker	--	--	CDFW SSC
Cyprinodon radiosus	Owens pupfish	Endangered	Endangered	CDFW FP; DRECP Covered Species
Rhinichthys osculus ssp. 2	Owens speckled dace	--	--	BLM sensitive; CDFW SSC
Siphateles bicolor snyderi	Owens tui chub	Endangered	Endangered	DRECP Covered Species
Amphibians				
Batrachoseps campi	Inyo Mountains slender salamander	--	--	BLM sensitive; CDFW SSC
Hydromantes ssp. 1	Owens Valley web-toed salamander	--	--	CDFW SSC
Lithobates pipiens	northern leopard frog	--	--	CDFW SSC
Rana sierrae	Sierra Nevada yellow-legged frog	Candidate	Candidate threatened	CDFW SSC
Reptiles				
Gopherus agassizii	desert tortoise	Threatened	Threatened	DRECP Covered Species
Sceloporus graciosus graciosus	northern sagebrush lizard	--	--	BLM sensitive
Uma scoparia	Mojave fringe-toed lizard	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species
Birds				
Accipiter cooperii	Cooper's hawk	--	--	CDFW WL
Aquila chrysaetos	golden eagle	--	--	BLM sensitive; CDFW FP; DRECP Covered Species
Asio otus	long-eared owl	--	--	CDFW SSC
Athene cunicularia	burrowing owl	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species

Table 4.4-1 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		
		Federal	State	Other*
Birds (cont.)				
Buteo swainsoni	Swainson's hawk	--	Threatened	BLM sensitive; DRECP Covered Species
Charadrius alexandrinus nivosus	western snowy plover	Threatened	--	CDFW SSC
Charadrius montanus	mountain plover	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species
Circus cyaneus	northern harrier	--	--	CDFW SSC
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	BLM sensitive; DRECP Covered Species
Elanus leucurus	white-tailed kite	--	--	BLM sensitive; CDFW FP DRECP Covered Species
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered	DRECP Covered Species
Falco mexicanus	prairie falcon	--	--	CDFW WL
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	BLM sensitive; CDFW FP; DRECP Covered Species
Icteria virens	yellow-breasted chat	--	--	CDFW SSC
Ixobrychus exilis	least bittern	--	--	CDFW SSC
Lanius ludovicianus	loggerhead shrike	--	--	CDFW SSC
Melozone crissalis eremophilus	Inyo California towhee	Threatened	Endangered	DRECP Covered Species
Pandion haliaetus	osprey	--	--	CDFW WL
Piranga rubra	summer tanager	--	--	CDFW SSC
Riparia riparia	bank swallow	--	Threatened	BLM sensitive; DRECP Covered Species
Toxostoma lecontei	Le Conte's thrasher	--	--	CDFW SSC
Vireo bellii pusillus	least Bell's vireo	Endangered	Endangered	DRECP Covered Species

Table 4.4-1 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		
		Federal	State	Other*
Mammals				
Antrozous pallidus	pallid bat	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species
Corynorhinus townsendii	Townsend's big-eared bat	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species
Euderma maculatum	spotted bat	--	--	BLM sensitive; CDFW SSC
Eumops perotis californicus	western mastiff bat	--	--	BLM sensitive; CDFW SSC; DRECP Covered Species
Lasiurus cinereus	hoary bat	--	--	DRECP Covered Species
Lepus townsendii townsendii	western white-tailed jackrabbit	--	--	CDFW SSC
Microtus californicus vallicola	Owens Valley vole	--	--	BLM sensitive; CDFW SSC
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	Endangered	Endangered	CDFW FP; DRECP Covered Species
Taxidea taxus	American badger	--	--	CDFW SSC; CA fur-bearing mammal
Vulpes macrotis	desert kit fox	--	--	CA fur-bearing mammal
Vulpes vulpes necator	Sierra Nevada red fox	--	Threatened	--
Xerospermophilus mohavensis	Mohave ground squirrel	--	Threatened	BLM sensitive; DRECP Covered Species

Sources: BLM 2010; CDFW 2014; Dudek et al. 2012; LADWP 2013; USFWS 2014a; Watson et al. 2012

SEDAS = Solar Energy Development Areas*BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management

CDFW = California Department of Fish and Wildlife

FP = listed as Fully Protected under Fish and Game Code

SSC = listed as Species of Concern under Fish and Game Code

WL = listed as Watch List by CDFW

DRECP = Desert Renewable Energy Conservation Plan

Table 4.4-2
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status			
		Federal	State	Rare Plant Rank*	Other**
Acleisanthes nevadensis	desert wing-fruit	--	--	2B.3	--
Aliciella triodon	coyote gilia	--	--	2B.2	--
Allium atrorubens var. *atrorubens*	Great Basin onion	--	--	2B.3	--
Allium nevadense	Nevada onion	--	--	2B.3	--
Androstephium breviflorum	small-flowered androstephium	--	--	2B.2	--
Astragalus argophyllus var. *argophyllus*	silver-leaved milk-vetch	--	--	2B.2	BLM sensitive
Astragalus geyeri var. *geyeri*	Geyer's milk-vetch	--	--	2B.2	--
Astragalus hornii var. *hornii*	Horn's milk-vetch	--	--	1B.1	--
Astragalus lentiginosus var. *piscinensis*	Fish Slough milk-vetch	Threatened	--	1B.1	--
Astragalus lentiginosus var. *sesquimetralis*	Sodaville milk-vetch	--	--	1B.1	DRECP Covered Species
Astragalus nyensis	Nye milk-vetch	--	--	1B.1	--
Astragalus preussii var. *preussii*	Preuss' milk-vetch	--	--	2B.3	--
Astragalus sabulonum	gravel milk-vetch	--	--	2B.2	--
Astragalus serenoi var. *shockleyi*	Shockley's milk-vetch	--	--	2B.2	--
Astragalus tidestromii	Tidestrom's milk-vetch	--	--	2B.2	--
Atriplex argentea var. *hillmanii*	Hillman's silverscale	--	--	2B.2	--
Atriplex argentea var. *longitrichoma*	Pahrump orache	--	--	1B.1	--
Blepharidachne kingii	King's eyelash grass	--	--	2B.3	--
Boechera dispar	pinyon rockcress	--	--	2B.3	--
Calochortus excavatus	Inyo County star-tulip	--	--	1B.1	BLM sensitive
Calochortus striatus	alkali mariposa-lily	--	--	1B.2	DRECP Covered Species
Chaetadelpha wheeleri	Wheeler's dune-broom	--	--	2B.2	--

Table 4.4-2 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status			
		Federal	State	Rare Plant Rank*	Other**
Crepis runcinata ssp. *hallii*	Hall's meadow hawksbeard	--	--	2B.1	--
Cryptantha fendleri	sand dune cryptantha	--	--	2B.2	DRECP Covered Species
Cymopterus multinervatus	purple-nerve cymopterus	--	--	2B.2	--
Cymopterus ripleyi var. *saniculoides*	sanicle cymopterus	--	--	1B.2	--
Dedeckera eurekensis	July gold	--	--	1B.3	BLM sensitive
Deinandra mohavensis	Mojave tarplant	--	Endangered	1B.3	DRECP Covered Species
Elymus salina	Salina Pass wild-rye	--	--	2B.3	--
Ephedra torreyana	Torrey's Mormon-tea	--	--	2B.1	--
Eremothera boothii ssp. boothii	Booth's evening-primrose	--	--	2B.3	--
Eremothera boothii ssp. intermedia	Booth's hairy evening-primrose	--	--	2B.3	--
Erigeron calvus	bald daisy	--	--	1B.1	BLM sensitive
Eriogonum bifurcatum	forked buckwheat	--	--	1B.2	--
Eriogonum contiguum	Ash Meadows buckwheat	--	--	2B.3	--
Fimbristylis thermalis	hot springs fimbristylis	--	--	2B.2	--
Grindelia fraxinipratensis	Ash Meadows gumplant	Threatened	--	1B.2	DRECP Covered Species
Ivesia kingii var. *kingii*	alkali ivesia	--	--	2B.2	BLM sensitive
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	--	--	2B.2	BLM sensitive
Lupinus pusillus var. *intermontanus*	intermontane lupine	--	--	2B.3	--
Mentzelia pterosperma	wing-seed blazing star	--	--	2B.2	--
Mentzelia torreyi	Torrey's blazing star	--	--	2B.2	--
Mentzelia tridentata	creamy blazing star	--	--	1B.3	--
Oryctes nevadensis	Nevada oryctes	--	--	2B.1	--
Penstemon fruticiformis var. *amargosae*	Amargosa beardtongue	--	--	1B.3	DRECP Covered Species

Table 4.4-2 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SEDAS OR OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status			
		Federal	State	Rare Plant Rank*	Other**
Peteria thompsoniae	spine-noded milk-vetch	--	--	2B.3	--
Phacelia inyoensis	Inyo phacelia	--	--	1B.2	BLM sensitive
Phacelia nashiana	Charlotte's phacelia	--	--	1B.2	DRECP Covered Species
Phacelia parishii	Parish's phacelia	--	--	1B.1	DRECP Covered Species
Phacelia pulchella var. *gooddingii*	Goodding's phacelia	--	--	2B.3	--
Plagiobothrys parishii	Parish's popcornflower	--	--	1B.1	--
Ranunculus hydrocharoides	frog's-bit buttercup	--	--	2B.1	--
Sclerocactus johnsonii	Johnson's bee-hive cactus	--	--	2B.2	--
Sidalcea covillei	Owens Valley checkerbloom		Endangered	1B.1	BLM sensitive
Sphenopholis obtusata	prairie wedge grass	--	--	2B.2	--
Thelypodium integrifolium ssp. *complanatum*	foxtail thelypodium	--	--	2B.2	--

Sources: BLM 2013; CDFW 2014; Dudek et al. 2012; LADWP 2013; USFWS 2014a; Watson et al. 2012
SEDAS = Solar Energy Development Areas
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
DRECP = Desert Renewable Energy Conservation Plan

4.4.1.11 Project Area Existing Conditions

Western Solar Energy Group

Laws Solar Energy Development Area

The Laws SEDA encompasses 18.2 square miles northeast of Bishop. US 6 trends north-south and an SCE 55 kV electrical line trends east-west through the SEDA. It is located in the Owens Valley west of the White Mountains and east of the Fish Slough and the Owens River. The SEDA is a relatively flat, largely undeveloped valley bottom with elevations ranging from 4,500 feet amsl to 5,100 feet amsl.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Laws SEDA is mapped as alkali desert scrub (Davis et al. 1998); however, portions of the site are used for croplands and are developed with residential and industrial properties. Ephemeral waterways enter the SEDA from the adjacent White Mountains to the east and low hills to the west and enter a network of canals associated with the agricultural land uses on the site.

Sensitive Habitats and Protected Natural Areas

No special status natural communities or protected natural areas are mapped within the Laws SEDA. An ACEC is mapped adjacent to the northwestern portion of the Laws SEDA, but it was not established for the protection of biological resources. Waterways and canals within the Laws SEDA provide habitat for aquatic species and may be jurisdictional waters of the US and/or waters of the State, which are considered sensitive habitats.

Habitat Connectivity and Wildlife Corridors

The Laws SEDA is surrounded by the White Mountains to the east, and undeveloped hills and perennial waterways including the Fish Slough and the Owens River, to the west. The majority of the site is undeveloped – US 6 and the relatively small area of industrial and residential development near the central west area of the SEDA are the most significant potential restrictions to wildlife movement through the area. The southernmost portion of the SEDA is undeveloped and falls within an area separating the Owens River and White Mountains by less than 2 miles.

The SEDA does not contain essential connectivity areas, missing linkages, or Important Bird Areas; however, because the portion of the White Mountains within the SEDA are relatively low in elevation and support desert scrub and ephemeral drainages, the undeveloped portions of the Laws SEDA in close proximity to perennial waterways to the west could provide connectivity for medium to large sized mammals dependent on perennial water sources, such as mule deer and coyote.

Critical Habitat

There is no USFWS-designated critical habitat in the Laws SEDA, although Fish Slough approximately 0.7 mile west of the SEDA contains critical habitat for Fish Slough milk-vetch.

Special Status Species

Four special status species of fish, two amphibians, one reptile, four birds, five mammals, and five plants were identified during the desktop analysis as either being known to occur or having the potential to occur within or adjacent to the Laws SEDA and be impacted by development activities (Table 4.4-3).

Owens Lake Solar Energy Development Area

The Owens Lake SEDA encompasses 138.6 square miles, including the approximately 110-square-mile dry Owens Lake lakebed. This SEDA encompasses the southern portion of the Owens Valley, at the historic terminus of the Owens River. Mount Whitney, in the southern Sierra Nevada, is approximately 15 miles northwest of the SEDA, and the Inyo Mountains rise to the east. Elevations range from over 4,100 feet amsl in the southeast area of the site, to approximately 3,550 feet amsl in the lakebed near the center of the site. Existing SCE and LADWP electrical lines generally follow the perimeter of the SEDA.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Owens Lake SEDA is mapped as alkali desert scrub, desert scrub, barren, desert riparian, freshwater emergent wetland, and lacustrine (Davis et al. 1998). According to the Owens Lake Habitat Management Plan, habitat types within Owens Lake include playa (corresponds with lacustrine), transmontane alkali meadow (corresponds in part with desert scrub, desert riparian, and freshwater emergent wetland habitats), and upland scrub (alkali desert scrub and desert scrub) (LADWP 2010). The majority of the SEDA is mapped as barren. This is associated with Owens Lake which, as previously described, is a dry lakebed as a result of water diversion from Owens River which historically fed the lake, to the Los Angeles Aqueduct.

Areas of the lake maintain aquatic habitat from seeps and springs and aquifers below the lakebed. LADWP currently floods portions of Owens Lake and implements vegetation management programs to abate the effects of the water diversion. Freshwater emergent wetland and forested riparian/riparian scrub are also associated with the outlet of the Owens River at the north bank of the lake. The desert scrub and alkali desert scrub occur along the perimeter of the barren lakebed. Various reservoirs and water bodies are mapped as lacustrine.

Table 4.4-3
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE LAWS SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Fish					
Catostomus fumeiventris	Owens sucker	--/--	CDFW SSC	Water bodies within the Owens River drainage. Adults can thrive in impoundments but needs gravelly riffles for spawning.	CNDDB reported occurrences in the Owens River and unnamed canals within 0.5 mile east of Laws.
Cyprinodon radiosus	Owens pupfish	Endangered/ Endangered	CDFW FP; DRECP Covered Species	Found among warm, clear, shallow water habitats in the Owens Valley.	CNDDB reported occurrences in the Owens River and unnamed canals within 0.5 mile east of Laws.
Rhinichthys osculus ssp. 2	Owens speckled dace	--/--	BLM sensitive; CDFW SSC	Small streams and springs in the Owens Valley.	CNDDB reported occurrence in canals in the northern portion of the Laws SEDA east of US 6.
Siphateles bicolor snyderi	Owens tui chub	Endangered/ Endangered	DRECP Covered Species	Endemic to the Owens River basin in a variety of habitats. Requires clear, clean water and aquatic vegetation.	CNDDB reported occurrences in the Owens River within 0.5 mile east of Laws.
Amphibians					
Batrachoseps campi	Inyo Mountains slender salamander	--/--	BLM sensitive; CDFW SSC	Occurs in moist canyons on the east and west slopes of the Inyo Mountains. Habitat consists of seeps and small streams as well as underground crevices.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Laws SEDA.

Table 4.4-3 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE LAWS SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Amphibians (cont.)					
Lithobates pipiens	northern leopard frog	--/--	CDFW SSC	Found near permanent or semi-permanent water in a variety of habitats.	CNDDB reported occurrences adjacent to the west side of the Laws SEDA near the confluence of the Owens River and Fish Slough as well as in the hills adjacent to the southeast corner of the Laws SEDA approximately 5 miles east of Bishop.
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in CNDDB within the Laws SEDA.
Birds					
Athene cunicularia	burrowing owl	--/--	CDFW SSC; DRECP Covered Species	Open dry grasslands, deserts, and scrublands characterized by low growing vegetation.	CNDDB reported occurrences in the vicinity of Laws.
Buteo swainsoni	Swainson's hawk	--/Threatened	DRECP Covered Species	Breeds in a variety of agricultural and native habitats with groves or lines of trees.	CNDDB reported occurrences approximately 1 mile north of Laws along Joe Smith Road and approximately 4 miles north of Laws along Rudolph Road.
Empidonax traillii extimus	southwestern willow flycatcher	Endangered/ Endangered	DRECP Covered Species	Riparian woodlands in southern California.	CNDDB reported occurrence in the vicinity of Laws along the Owens River

Table 4.4-3 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE LAWS SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Birds (cont.)					
Falco mexicanus	prairie falcon	--/--	CDFW WL	Breeds on cliffs near dry open terrain.	CNDDB reported occurrence adjacent to the northwestern boundary of the Laws SEDA.
Mammals					
Antrozous pallidus	pallid bat	--/--	CDFW SSC; DRECP Covered Species	Open dry habitats with rocky areas or abandoned buildings for roosting.	CNDDB reported occurrence near the eastern boundary of the Laws SEDA to the northeast of Laws along Silver Canyon Road.
Euderma maculatum	spotted bat	--/--	CDFW SSC	Occupies a wide variety of habitats. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	CNDDB reported occurrence along the southern boundary of the Laws SEDA approximately 4 miles east of Bishop.
Microtus californicus vallicola	Owens Valley vole	--/--	CDFW SSC	Found in wetlands and lush grassy ground in the Owens Valley.	CNDDB reported occurrences in the vicinity of Laws and along the eastern border of the Laws SEDA 5 miles northeast of Bishop near the mouth of Silver Canyon in the White Mountains.
Myotis ciliolabrum	western small-footed myotis	--/--	--	Found in a wide range of habitats but prefers arid woody and brush uplands near water. Seeks cover in caves, buildings, mines and crevices.	CNDDB reported occurrence along the eastern border of the Laws SEDA 5 miles northeast of Bishop near the mouth of Silver Canyon in the White Mountains.
Myotis volans	long-legged myotis	--/--	--	Most common in woodland and forest habitats above 4,000 feet amsl. Uses trees for day roosts and caves and mines for night roosts.	CNDDB reported occurrence along the eastern border of the Laws SEDA 5 miles northeast of Bishop near the mouth of Silver Canyon in the White Mountains.

Table 4.4-3 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE LAWS SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Plants					
Aliciella triodon	coyote gilia	--/--/2B.2	--	Found in open, sandy or rocky areas in great basin scrub, and pinyon-juniper woodland from elevations between 610 to 1,700 meters amsl.	CNDDB reported occurrence in the north end of the Owens Valley in Coldwater Canyon near the County Line.
Dedeckera eurekensis	July gold	--/--/1B.3	--	Found in carbonate soils in Mojavean Desert Scrub at elevations from 1,215 to 2,200 meters amsl.	CNDDB reported occurrence along the eastern boundary of the Laws SEDA in Gunter Creek Canyon in the White Mountains.
Eremothera boothii ssp. *intermedia*	Booth's hairy evening-primrose	--/--/2B.3	--	Found in sandy flats, and steep loose slopes in great basin scrub and pinyon-juniper woodland at elevations from 900 to 2,400 meters amsl.	CNDDB reported occurrence along the central east side of the Laws SEDA in a spring approximately 1 mile south of the mouth of Silver Canyon and 2 miles southeast of Laws.
Sphenopholis obtusata	prairie wedge grass	--/--/2B.2	--	Found in meadows and seeps within cismontane woodland at elevations from 360 to 2,325 meters amsl.	CNDDB reported occurrence along the central east side of the Laws SEDA in a spring approximately 1 mile south of the mouth of Silver Canyon and 2 miles southeast of Laws.

Table 4.4-3 (cont.)
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE LAWS SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Plants (cont.)					
Thelypodium integrifolium ssp. *complanatum*	foxtail thelypodium	--/--/2B.2	--	Found in meadows and seeps within Great Basin scrub having alkaline or sub-alkaline soils at elevations from 1,100 to 2,500 meters.	CNDDB reported occurrence along the central east side of the Laws SEDA in a spring approximately 1 mile south of the mouth of Silver Canyon and 2 miles southeast of Laws.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
CDFW = California Department of Fish and Wildlife
FP = listed as Fully Protected under Fish and Game Code
SSC = listed as Species of Concern under Fish and Game Code
WL = listed as Watch List by CDFW
DRECP = Desert Renewable Energy Conservation Plan

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Sensitive Habitats and Protected Natural Areas

The desert riparian and freshwater emergent wetland habitats described above are considered to be sensitive habitat. Owens Lake, Owens River, washes, and other waterways and water bodies located within the SEDA may contain waters of the US and/or State which are also considered sensitive habitats. Mohave ground squirrel Conservation Area is located along the southeastern boundary of the SEDA. The Cartago Wildlife Area is a State Wildlife Management Area located along the southwestern bank of Owens Lake. Spring-fed freshwater wetlands provide habitat for waterfowl, wading birds, and shorebirds including western snowy plovers, white-faced ibis, and rails.

Habitat Connectivity and Wildlife Corridors

Although Owens Lake is a largely barren lakebed, the flooded grids associated with the LADWP mitigation program, and groundwater seeps and springs provide perennial water sources that attract hundreds of thousands of birds every year along the Pacific Flyway. The Owens River and the entire Owens Lake lakebed are designated as Important Bird Areas, largely due to its importance to waterfowl, shorebirds, and wading birds that use it as a stopover in spring and fall as they migrate (Audubon California 2014). The Owens Lake SEDA contains a missing link corridor that extends from the lakebed, northward along the Owens River.

Critical Habitat

There is no USFWS-designated critical habitat in the Owens Lake SEDA, although critical habitat for Sierra Nevada bighorn sheep occurs just west of the SEDA, in the Sierra Nevada and eastern foothills.

Special Status Species

Two special status species of fish, one amphibian, three reptiles, seven birds, four mammals, and three plants were identified during the desktop analysis as either being known to occur or having the potential to occur within or adjacent to the Owens Lake SEDA and be impacted by development activities (Table 4.4-4).

<u>Rose Valley Solar Energy Development Area</u>

The Rose Valley SEDA encompasses 38.5 square miles along a narrow valley between the southern Sierra Nevada to the west and the Coso Range to the east. Elevations range from near 4,500 feet amsl in the Sierra Nevada foothills along the western boundary, to approximately 3,400 feet amsl at the southern end of the site.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Rose Valley SEDA is mapped as alkali desert scrub, desert scrub, barren, lacustrine, and pinyon juniper (Davis et al. 1998). The majority of the SEDA is mapped as alkali desert scrub and desert scrub. The pinyon juniper is mapped at the westernmost area of the SEDA. Ephemeral waterways enter the SEDA from the adjacent ranges, traversing the valley bottom, and agricultural lands are located in the northern portion of the SEDA. The Los Angeles Aqueduct flows as a concrete-lined, open channel through the northern half of the SEDA, and reenters the SEDA south of the North Haiwee Reservoir where it is directed underground.

Sensitive Habitats and Protected Natural Areas

The ephemeral waterways and other waterways within this SEDA may contain waters of the US and/or state which are considered sensitive habitats. The CNDDB spatial data mapping identifies active desert dunes in the northernmost portion of the SEDA (CNDDB 2014). This habitat is classified as a special status natural community by CDFW. The entire SEDA falls within Mohave ground squirrel Conservation Area. This SEDA contains the Fossil Falls ACEC which is a cultural resource, and not managed for biological resources (DataBasin 2014).

Habitat Connectivity and Wildlife Corridors

The Rose Valley SEDA is surrounded by the Sierra Nevada to the west and the Argus Mountains to the east. Wildlife may use the washes to travel through the SEDA, between the ranges and between the Sierra Nevada and water sources at the North Haiwee Reservoir. Open channel segments of the Los Angeles Aqueduct in the northern portion of the SEDA are fenced, which limits availability to wildlife for use, and also acts as an obstacle for wildlife movement. US 395 is an existing obstacle to wildlife movement through the SEDA, although it would be expected wildlife would use washes to pass under the highway or cross in the least populated areas at low traffic times (at night). The SEDA does not contain essential connectivity areas or missing links. The Los Angeles Aqueduct through the SEDA and the North Haiwee Reservoir are designated Important Bird Areas. Similar to the Owens Lake described above, these water bodies would attract large numbers of birds, especially during the migratory bird season when waterfowl, shorebirds, and wading birds use it as a stopover as they move through the area.

Critical Habitat

There is no USFWS-designated critical habitat in the Rose Valley SEDA, although critical habitat for Sierra Nevada bighorn sheep occurs in the Sierra Nevada, west of the SEDA.

Special Status Species

Two special status species of reptiles, eight birds, two mammals, and four rare plants were identified during the desktop analysis as either being known to occur or having the potential to occur within or adjacent to the Rose Valley SEDA and be impacted by development activities (Table 4.4-5).

Table 4.4-4
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS LAKE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Fish					
Cyprinodon radiosus	Owens pupfish	Endangered/ Endangered	CDFW FP; DRECP Covered Species	Found among warm, clear, shallow water habitats in the Owens Valley.	CNDDB reported occurrences in springs along the west side of Owens Lake.
Siphateles bicolor snyderi	Owens tui chub	Endangered/ Endangered	DRECP Covered Species	Endemic to the Owens River basin in a variety of habitats. Requires clear, clean water and aquatic vegetation.	CNDDB reported occurrences along the southwest edge of Owens Lake, possibly extirpated.
Invertebrates					
Pyrgulopsis wongi	Wong's springsnail	--/--	USFS Sensitive	Found in seeps and small to moderate sized spring-fed streams where it is common in watercress and/or on small bits of travertine and stone.	Several CNDDB reported occurrences within the SEDA.
Amphibians					
Batrachoseps campi	Inyo Mountains slender salamander	--/--	BLM sensitive; CDFW SSC	Occurs in moist canyons on the east and west slopes of the Inyo Mountains. Habitat consists of seeps and small streams as well as underground crevices.	CNDDB reported occurrence in a foothill spring near the northeast boundary of the Owens Lake SEDA.
Reptiles					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in CNDDB within the Owens Lake SEDA.

Table 4.4-4 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS LAKE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Reptiles (cont.)					
Sceloporus graciosus graciosus	northern sagebrush lizard	--/--	BLM sensitive	Ground dweller found near bushes, brush heaps, logs or rocks.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Owens Lake SEDA.
Uma scoparia	Mojave fringe-toed lizard	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Found in sand dunes, dry lake beds, riverbanks, desert washes, sparse alkali scrub and desert scrub habitats.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Owens Lake SEDA.
Birds					
Athene cunicularia	burrowing owl	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Open dry grasslands, deserts, and scrublands characterized by low growing vegetation.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Owens Lake SEDA.
Charadrius alexandrinus nivosus	western snowy plover	Threatened/--	CDFW SSC	Found on sandy beaches, salt pond levees, and shores of large alkali lakes.	CNDDB reported occurrence in the Owens Lake bed between Dolomite and Olancha.
Charadrius montanus	mountain plover	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Found in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	CNDDB reported occurrence in the vicinity of Owens Lake.

Table 4.4-4 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS LAKE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Birds (cont.)					
Circus cyaneus	northern harrier	--/--	CDFW SSC	Nests in riparian and wetland habitats and forages over open shrublands, grasslands, marshes, and wetlands.	Suitable habitat may be present; no reported occurrences in CNDDB within the Owens Lake SEDA.
Icteria virens	yellow-breasted chat	--/--	CDFW SSC	Resides in low, dense riparian habitat typically dominated by willow, blackberry, and wild grape.	CNDDB reported occurrence in the vicinity of Ash Creek.
Ixobrychus exilis	least bittern	--/--	CDFW SSC	Nests among fresh and brackish marshes with dense and tall aquatic and semiaquatic vegetation.	CNDDB reported occurrence in the vicinity of Cottonwood Marsh along the west edge of Owens Lake.
Toxostoma lecontei	Le Conte's thrasher	--/--	CDFW SSC	Occurs in open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats.	CNDDB reported occurrence in the vicinity of Keeler.
Mammals					
Antrozous pallidus	pallid bat	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Open dry habitats with rocky areas or abandoned buildings for roosting.	CNDDB reported occurrences throughout the Owens Lake SEDA.
Euderma maculatum	spotted bat	--/--	BLM sensitive; CDFW SSC	Occupies a wide variety of habitats. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	CNDDB reported occurrences throughout the Owens Lake SEDA.
Microtus californicus vallicola	Owens Valley vole	--/--	BLM sensitive; CDFW SSC	Found in wetlands and lush grassy ground in the Owens Valley.	CNDDB reported occurrence in the vicinity of Cabin Bar Ranch.

Table 4.4-4 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS LAKE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Mammals (cont.)					
Xerospermophilus mohavensis	Mohave ground squirrel	--/Threatened	BLM sensitive; DRECP Covered Species	Restricted to open desert scrub, alkali scrub, and Joshua Tree woodland habitats within the Mojave Desert.	CNDDB reported occurrence approximately 1.5 miles northwest of the intersection of US 136 and US 190.
Plants					
Erigeron calvus	bald daisy	--/--/1B.1	BLM sensitive	Known from only one location within Great Basin scrub habitat dominated by sagebrush and other desert scrub species at an elevation of 1,215 meters amsl.	CNDDB reported occurrence 4 miles north of Keeler at the foot of the Inyo Mountains.
Plagiobothrys parishii	Parish's popcornflower	--/--/1B.1	--	Found in mesic alkaline soils in Great Basin scrub and Joshua tree woodland at elevations from 750 to 1,400 meters amsl.	CNDDB two reported occurrences along the southwest edge of Owens Lake north of Cartago.

Table 4.4-4 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS LAKE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Plants (cont.)					
Sidalcea covillei	Owens Valley checkerbloom	-- /Endangered /1B.1	BLM sensitive	Found in mesic soils near alkali meadows and seeps in Great Basin scrub at elevations from 1,100 to 1,300 meters amsl.	CNDDB reported occurrence along the southwest edge of Owens Lake approximately 1 mile north of Cartago.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014

CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area

*Rare Plant Rank

1B = rare, threatened, or endangered in California and elsewhere

2B = rare, threatened, or endangered in California but more common elsewhere

.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 = fairly endangered in California (20-80% occurrences threatened)

.3 = not very endangered in California (<20% of occurrences threatened)

**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management

CDFW = California Department of Fish and Wildlife

FP = listed as Fully Protected under Fish and Game Code

SSC = listed as Species of Concern under Fish and Game Code

DRECP = Desert Renewable Energy Conservation Plan

USFS Sensitive = Listed as sensitive by the US Forest Service

Table 4.4-5
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE ROSE VALLEY SEDA

Scientific Name	Common Name	Status: Federal/ State/Rare Plant Rank*	Status: Other**	General Habitat Requirements	Rationale
Reptiles					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	CNDDB reported occurrences south of South Haiwee Reservoir and south of Dunmovin east of the US 395 corridor.
Sceloporus graciosus graciosus	northern sagebrush lizard	--/--	BLM sensitive	Ground dweller found near bushes, brush heaps, logs or rocks.	CNDDB reported occurrence approximately 3 miles southeast of Olancha near the junction of US 395 and US 190.
Birds					
Aquila chrysaetos	golden eagle	--/--	BLM sensitive; CDFW FP; DRECP Covered Species	Found in rolling foothills, mountain areas, sage-juniper flats, and desert. Nests in cliff-walled canyons and large trees.	CNDDB reported occurrence in the vicinity of the Haiwee Powerhouse.
Athene cunicularia	burrowing owl	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Open dry grasslands, deserts, and scrublands characterized by low growing vegetation.	CNDDB reported occurrences approximately one mile north of Coso Junction along both sides of Gill Station Coso Road.
Buteo swainsoni	Swainson's hawk	--/Threatened	BLM sensitive; DRECP Covered Species	Breeds in a variety of agricultural and native habitats with groves or lines of trees.	CNDDB reported occurrence approximately 1 mile east of US 395 and 1 mile north of Haiwee Reservoir.

Table 4.4-5 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE ROSE VALLEY SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Birds (cont.)					
Circus cyaneus	northern harrier	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Nests in riparian and wetland habitats and forages over open shrublands, grasslands, marshes, and wetlands.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Rose Valley SEDA.
Elanus leucurus	white-tailed kite	--/--	BLM sensitive; DRECP Covered Species	Found in a variety of open habitats. Nests in trees near suitable foraging habitat.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB within the Rose Valley SEDA.
Icteria virens	yellow-breasted chat	--/--	BLM sensitive; CDFW FP; DRECP Covered Species	Resides in low, dense riparian habitat typically dominated by willow, blackberry, and wild grape.	CNDDB reported occurrence in the northern end of the Rose Valley SEDA in the vicinity of Olancha.
Lanius ludovicianus	loggerhead shrike	--/--	CDFW SSC	Nests and resides in desert scrub and savannah woodland habitats.	CNDDB reported occurrence approximately 3 miles southeast of Olancha near the junction of US 395 and US 190.
Vireo bellii pusillus	least Bell's vireo	Endangered/ Endangered	CDFW SSC	Prefers low riparian habitats in the vicinity of water or dry river bottoms below 2,000 feet.	CNDDB reported occurrence in the northern end of the Rose Valley SEDA in the vicinity of Olancha.

Table 4.4-5 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE ROSE VALLEY SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Mammals					
Microtus californicus vallicola	Owens Valley vole	--/--	BLM sensitive; CDFW SSC	Found in wetlands and lush grassy ground in the Owens Valley.	CNDDB reported occurrence approximately 3.5 miles southeast of Olancha near the junction of US 395 and US 190.
Xerospermophilus mohavensis	Mohave ground squirrel	--/Threatened	BLM sensitive; DRECP Covered Species	Restricted to open desert scrub, alkali scrub, and Joshua Tree woodland habitats within the Mojave Desert.	CNDDB reported occurrences in the northern portion of the Rose Valley SEDA along the US 395 corridor in the vicinity of Grant and east of US 39 northeast of Grant.
Plants					
Cymopterus ripleyi var. *saniculoides*	sanicle cymopterus	--/--/1B.2	--	Found on sandy soils (often with carbonate) within Joshua Tree woodland and Mojavean desert scrub from an elevation of 1,000 to 1,660 meters amsl.	CNDDB reported occurrence in the northern portion of the Rose Valley SEDA approximately 0.5 mile east of Grant.
Eremothera boothii ssp. boothii	Booth's evening-primrose	--/--/2B.3	--	Found in Joshua Tree woodland and pinyon-juniper woodland from an elevation of 900 to 2,400 meters amsl.	CNDDB reported occurrence along the US 395 corridor in the vicinity of Dunmovin.
Mentzelia tridentata	creamy blazing star	--/--/1B.3	--	Found in Mojavean desert scrub from an elevation of 700 to 1,160 meters amsl.	CNDDB reported occurrence approximately 0.5 mile south of South Haiwee Reservoir.
Plants					
Sidalcea covillei	Owens Valley checkerbloom	--/Endangered/ 1B.1	BLM sensitive	Found in mesic soils near alkali meadows and seeps in Great Basin scrub at elevations from 1,100 to 1,300 meters amsl.	CNDDB reported occurrence in the vicinity of Haiwee Meadows.

Footnotes on next page.

Notes for Table 4.4-5:
Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
CDFW = California Department of Fish and Wildlife
FP = listed as Fully Protected under Fish and Game Code
SSC = listed as Species of Concern under Fish and Game Code
DRECP = Desert Renewable Energy Conservation Plan

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Pearsonville Solar Energy Development Area

The Pearsonville SEDA encompasses 6.9 square miles along US 395, between the southern Sierra Nevada to the west and the White Hills to the east. Elevations range from approximately 2,900 feet amsl at the westernmost part of the SEDA, to 2,400 feet amsl at the southeast corner.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Pearsonville SEDA is mapped entirely as alkali desert scrub and desert scrub. Residential development is associated with Pearsonville near the County boundary.

Sensitive Habitats and Protected Natural Areas

The USFWS National Wetlands Inventory (USFWS 2014b) identifies freshwater ponds and freshwater forested/shrub wetland east of 9 Mile Canyon Road in the Pearsonville SEDA. No protected natural areas occur within this SEDA, although it directly abuts Mohave ground squirrel Conservation Area.

Habitat Connectivity and Wildlife Corridors

The SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas; however, two missing links corridors are identified directly north of the SEDA, at a constriction between the Sierra Nevada foothills and the Coso Range. The Sierra Nevada range directly west of the SEDA is identified as an Important Bird Area.

Critical Habitat

There is no USFWS-designated critical habitat in the Pearsonville SEDA.

Special Status Species

Desert tortoise and Mohave ground squirrel are the only special status species that were identified during the desktop analysis as either being known to occur or having the potential to occur within or adjacent to the Pearsonville SEDA and be impacted by development activities (Table 4.4-6).

Owens Valley Study Area

The OVSA encompasses the extent of the valley within the County, excluding the Laws and Owens Lake SEDAs. This area is described in detail in the description of Owens Valley in Section 4.4.1. The valley is largely undeveloped. Ranching and recreation are the predominant land uses in the Owens Valley, with a large portion of the valley floor used as pasture or rangeland for livestock.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the OVSA is mapped primarily as alkali desert scrub and desert scrub. Urban areas are associated with Bishop. Sagebrush, pinyon juniper, montane riparian, and low sage occur along the western edge of the valley, associated with the Sierra Nevada foothills. Freshwater emergent wetlands occur along the Owens River and its tributaries.

Sensitive Habitats and Protected Natural Areas

Several Wilderness Study Areas occur within the OVSA (Figure 4.4-3). The USFWS National Wetlands Inventory (USFWS 2014b) identifies lakes, ponds, streams, and freshwater wetlands throughout the valley floor and adjacent foothills. Throughout the valley, wetlands are primarily concentrated along the base of the Sierra Nevada, and are associated with the range's drainages. The more arid ranges to the west generally do not contain the hydrology to support wetlands. Wetlands are particularly numerous in the northern portion of the valley, where the Owens River and its tributaries are not modified by the Los Angeles Aquifer, and in the vicinity of Independence, southward to Owens Lake.

Habitat Connectivity and Wildlife Corridors

As previously mentioned in the description of the Owens Lake SEDA, the Owens River and the entire Owens Lake lakebed are designated as Important Bird Areas, largely due to its importance to waterfowl, shorebirds, and wading birds that use it as a stopover in spring and fall as they migrate (Audubon California 2014). The Important Bird Area extends along the river for its entire length through the County. In addition, the segment of the Los Angeles Aqueduct where it generally follows the Owens River is designated as an Important Bird Area. A missing link corridor extends across the valley, connecting the Sierra Nevada to the Inyo Mountains at the valley's narrowest point. Another missing link corridor extends from that point southward along the Owens River, to Owens Lake.

Critical Habitat

Fish Slough at the northern boundary of the OVSA contains critical habitat for Fish Slough milk-vetch. Critical habitat for Sierra Nevada bighorn sheep occurs just west of the OVSA, in the Sierra Nevada and eastern foothills. Critical habitat for western yellow-billed cuckoo is located along the Owens River (Unit 5: CA-5 Owens River) in the OVSA.

Special Status Species

Table 4.4-7 presents the regionally occurring special status wildlife species that were identified during the desktop analysis as either being known to occur or having the potential to occur in the OVSA, and Table 4.4-8 presents special status plants that were identified as either being known to occur or having the potential to occur (CNDDB 2014).

Table 4.4-6
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE PEARSONVILLE SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in the CNDDB within the Pearsonville SEDA.
Mammal					
Xerospermophilus mohavensis	Mohave ground squirrel	--/Threatened	BLM sensitive; DRECP Covered Species	Restricted to open desert scrub, alkali scrub, and Joshua Tree woodland habitats within the Mojave Desert.	CNDDB reported occurrences in the northern portion of the SEDA approximately 1 mile north of 9 Mile Canyon Road and 0.5 mile west of US 395 and adjacent to the northwest corner of the SEDA 4 miles south of Little Lake.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014
CNDDB = California Natural Diversity Database
SEDA = Solar Energy Development Area
USFWS = US Fish and Wildlife Service
*BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
DRECP = Desert Renewable Energy Conservation Plan

Table 4.4-7
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Fish					
Catostomus fumeiventris	Owens sucker	--/--	CDFW SSC	Water bodies within the Owens River drainage. Adults can thrive in impoundments but needs gravelly riffles for spawning.	CNDDB many reported occurrences in water bodies including the Owens River, ditches, streams, and canals.
Cyprinodon radiosus	Owens pupfish	Endangered/ Endangered	CDFW FP; DRECP Covered Species	Found among warm, clear, shallow water habitats in the Owens Valley.	CNDDB many reported occurrences in water bodies including the Owens River, ponds, wells, and drainages.
Rhinichthys osculus ssp. 2	Owens speckled dace	--/--	BLM sensitive; CDFW SSC	Small streams and springs in the Owens Valley.	CNDDB many reported occurrences in water bodies including the Owens River, ditches, streams, and canals.
Siphateles bicolor snyderi	Owens tui chub	Endangered/ Endangered	DRECP Covered Species	Endemic to the Owens River basin in a variety of habitats. Requires clear, clean water and aquatic vegetation.	CNDDB many reported occurrences within Owens Lake and a variety of springs, ponds, and other water bodies.
Amphibians					
Batrachoseps campi	Inyo Mountains slender salamander	--/--	BLM sensitive; CDFW SSC	Occurs in moist canyons on the east and west slopes of the Inyo Mountains. Habitat consists of seeps and small streams as well as underground crevices.	CNDDB several reported occurrences in seeps and riparian habitats in the foothills.
Hydromantes ssp. 1	Owens Valley web-toed salamander	--/--	CDFW SSC	Rock areas in mixed conifer, red fir, lodgepole pine, and subalpine habitats.	CNDDB two non-specific records in the SEDA.

Table 4.4-7 (cont.)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Amphibians (cont.)					
Lithobates pipiens	northern leopard frog	--/--	CDFW SSC	Found near permanent or semi-permanent water in a variety of habitats.	CNDDB several reported occurrences in the Owens River, Birch Creek, and Baker Creek.
Rana sierrae	Sierra Nevada yellow-legged frog	Candidate/ Candidate threatened	CDFW SSC	Found in a variety of habitats where it is always encountered within a few feet of water.	CNDDB reported occurrence in the vicinity of Lone Pine approximately 2 miles north of US 395 and US 136.
Reptiles					
Elgaria panamintina	Panamint alligator lizard	--/--	BLM sensitive; CDFW SSC; USFS Sensitive	Found in areas near permanent water in canyons, gullies, and rocky areas near dense vegetation.	CNDDB reported occurrences in the White and Inyo Mountains and the Panamint Mountains.
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in the CNDDB in the OVSA.
Birds					
Accipiter cooperii	Cooper's hawk	--/--	CDFW WL	Found in open woodland habitats, nests mainly in deciduous trees within riparian habitats.	CNDDB reported occurrence in the vicinity of Owens Valley Ranch.
Asio otus	long-eared owl	--/--	CDFW SSC	Found in riparian bottomlands consisting of species such as willows, cottonwoods and oaks.	CNDDB reported occurrences approximately 2 miles south of Big Pine.
Athene cunicularia	burrowing owl	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Open dry grasslands, deserts, and scrublands characterized by low growing vegetation.	CNDDB reported occurrences approximately 2 miles northeast of Big Pine and in the vicinity of Laws.

Table 4.4-7 (cont.)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Birds (cont.)					
Buteo swainsoni	Swainson's hawk	--/ Threatened	BLM sensitive; DRECP Covered Species	Breeds in a variety of agricultural and native habitats with groves or lines of trees.	CNDDB many reported occurrences throughout the OVSA.
Charadrius alexandrinus nivosus	western snowy plover	Threatened	CDFW SSC	Found on sandy beaches, salt pond levees, and shores of large alkali lakes.	CNDDB reported occurrence in the Owens Lake bed between Dolomite and Olancha and in the vicinity of Tinemaha Reservoir.
Charadrius montanus	mountain plover	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Found in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	CNDDB reported occurrence in the vicinity of Owens Lake and in the vicinity of Tinemaha Reservoir.
Circus cyaneus	northern harrier	--/--	CDFW SSC	Nests in riparian and wetland habitats and forages over open shrublands, grasslands, marshes, and wetlands.	CNDDB reported occurrence in the Alabama Hills Recreation Area.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened/ Endangered	BLM sensitive; DRECP Covered Species	Nests in riparian forests along the broad lower flood bottoms of larger river systems.	CNDDB reported occurrences along the Owens River, Hogback Creek, Baker Creek, and Tinemaha Reservoir.
Elanus leucurus	white-tailed kite	--/--	BLM sensitive; CDFW FP DRECP Covered Species	Found in a variety of habitats with suitable nest trees in proximity to open grasslands, shrublands, or agricultural fields for foraging.	Included on the BLM sensitive species list and suitable habitat may be present; no reported occurrences in CNDDB in the OVSA.
Empidonax traillii extimus	southwestern willow flycatcher	Endangered/ Endangered	DRECP Covered Species	Riparian woodlands in southern California.	CNDDB reported occurrences along the Owens River and Horton Creek.

Table 4.4-7 (cont.)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Birds (cont.)					
Falco mexicanus	prairie falcon	--/--	CDFW WL	Breeds on cliffs near dry open terrain.	CNDDB two non-specific records in the SEDA.
Haliaeetus leucocephalus	bald eagle	Delisted/ Endangered	BLM sensitive; CDFW FP; DRECP Covered Species	Nests in large old growth or dominant live trees within 1 mile of water adjacent to ocean shores, lake margins, or large rivers.	CNDDB reported occurrence in the vicinity of Tinemaha Reservoir.
Icteria virens	yellow-breasted chat	--/--	CDFW SSC	Resides in low, dense riparian habitat typically dominated by willow, blackberry, and wild grape.	CNDDB several reported occurrences in riparian habitats near Big Pine, Lone Pine, Independence, and Ash Creek.
Ixobrychus exilis	least bittern	--/--	CDFW SSC	Nests among fresh and brackish marshes with dense and tall aquatic and semiaquatic vegetation.	CNDDB reported occurrence in the vicinity of Billy Lake.
Pandion haliaetus	osprey	--/--	CDFW WL	Large nests built in tree tops within 15 miles of the ocean shore, bays, freshwater lakes, or larger streams.	CNDDB reported occurrence in the vicinity of Tinemaha Reservoir.
Piranga rubra	summer tanager	--/--	CDFW SSC	Summer resident of desert riparian along the lower Colorado River and locally elsewhere in California deserts.	CNDDB reported occurrence in the vicinity of Owens Valley Ranch.
Riparia riparia	bank swallow	--/Threatened	BLM sensitive; DRECP Covered Species	Nests on vertical banks or cliffs with fine textured sandy soil near streams, rivers, lakes, or the ocean.	CNDDB reported occurrences along the Owens River and the North Fork Bishops Creek.

Table 4.4-7 (cont.)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Birds (cont.)					
Vireo bellii pusillus	least Bell's vireo	--/Endangered	DRECP Covered Species	Summer resident of southern California in low riparian habitats in vicinity of water or in dry river bottoms.	CNDDB reported occurrence near Lone Pine considered extirpated.
Mammals					
Antrozous pallidus	pallid bat	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Open dry habitats with rocky areas or abandoned buildings for roosting.	CNDDB reported occurrences throughout the OVSA.
Corynorhinus townsendii	Townsend's big-eared bat	--/--	BLM sensitive; CDFW SSC; DRECP Covered Species	Found throughout California in a variety of mesic habitats.	CNDDB reported occurrences throughout the OVSA.
Euderma maculatum	spotted bat	--/--	BLM sensitive; CDFW SSC	Occupies a wide variety of habitats. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	CNDDB reported occurrences throughout the OVSA.
Lasiurus cinereus	hoary bat	--/--	DRECP Covered Species	Prefers open habitats with access to trees for cover and open areas and habitat edges for foraging. Roosts in dense foliage of medium to large trees.	CNDDB reported occurrences throughout the OVSA.

Table 4.4-7 (cont.)
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Mammals (cont.)					
Lepus townsendii townsendii	western white-tailed jackrabbit	--/--	CDFW SSC	Found in sagebrush, subalpine conifer, juniper, alpine dwarf shrub, and perennial grassland.	CNDDB reported occurrences throughout the OVSA.
Microtus californicus vallicola	Owens Valley vole	--/--	BLM sensitive; CDFW SSC	Found in wetlands and lush grassy ground in the Owens Valley.	CNDDB reported occurrences throughout the OVSA.
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	Endangered/ Endangered	CDFW FP; DRECP Covered Species	Widely distributed from the White Mountains in Mono County to the Chocolate Mountains in Imperial County in open, rocky, steep areas with available water and herbaceous forage.	CNDDB reported occurrences in the vicinity of Mt. Langley and Mt. Williamson.
Vulpes vulpes necator	Sierra Nevada red fox	--/ Threatened		Found in a variety of habitats from wet meadows to forested areas.	CNDDB reported occurrence in the vicinity of Bishop.

Source: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; OVSA = Owens Valley Study Area
USFWS = US Fish and Wildlife Service
*BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
CDFW = California Department of Fish and Wildlife
FP = listed as Fully Protected under Fish and Game Code
SSC = listed as Species of Concern under Fish and Game Code
WL = listed as Watch List by CDFW
DRECP = Desert Renewable Energy Conservation Plan

Table 4.4-8
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Aliciella triodon	coyote gilia	--/--/2B.2	--	Found in open, sandy or rocky areas in great basin scrub, and pinyon-juniper woodland from elevations between 610 to 1,700 meters amsl.	CNDDB reported occurrences along Mazourka Canyon Road.
Allium atrorubens var. *atrorubens*	Great Basin onion	--/--/2B.3	--	Found in Great Basin scrub and pinyon-juniper woodland in the White Mountains from an elevation of 1,200 to 2,100 meters amsl.	CNDDB reported occurrence 3 miles southwest of Big Pine.
Astragalus argophyllus var. *argophyllus*	silver-leaved milk-vetch	--/--/2B.2	BLM sensitive	Found in playas, meadows, and seeps in stiff alluvial clays and loams from an elevation of 1,280 to 2,350 meters amsl.	CNDDB reported occurrences along the Owens River in the vicinity of Laws.
Astragalus geyeri var. *geyeri*	Geyer's milk-vetch	--/--/2B.2	--	Found in chenopod scrub and Great Basin scrub from an elevation of 1,150 to 1,550 meters amsl.	CNDDB reported occurrence in the Owens Valley 2 miles east of Blackrock.
Astragalus hornii var. *hornii*	Horn's milk-vetch	--/--/1B.1	--	Found in meadows and seeps, alkaline playas, lake margins, 60 to 850 meters amsl.	CNDDB reported occurrence along the Owens River 2 miles north of Lone Pine.
Astragalus lentiginosus var. *piscinensis*	Fish Slough milk-vetch	Threatened/-- /1B.1	--	Found in desert dunes, along the lower slopes of mobile dunes from an elevation of 900 to 1,175 meters amsl.	CNDDB reported occurrences along Fish Slough.

Table 4.4-8 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Astragalus serenoi var. *shockleyi*	Shockley's milk-vetch	--/--/2B.2	--	Found on coarse granitic alluvium in chenopod scrub, Great Basin scrub, and pinyon-juniper woodland from an elevation of 1,500 to 2,250 meters amsl.	CNDDB reported occurrence near Monola Siding.
Atriplex argentea var. *hillmanii*	Hillman's silverscale	--/--/2B.2	--	Found in Great Basin scrub, meadows and seeps from an elevation of 1,200 to 1,700 meters amsl.	CNDDB reported occurrence in the Owens Valley 2 miles east of Blackrock.
Blepharidachne kingii	King's eyelash grass	--/--/2B.3	--	Found in pinyon-juniper woodland and Mojavean desert scrub.	CNDDB reported occurrence along Waucoba Road near junction with US 168 east of Big Pine in the Owens Valley.
Boechera dispar	pinyon rockcress	--/--/2B.3	--	Found in Joshua tree woodland, pinyon-juniper woodland and Mojavean desert scrub on granitic gravelly slopes and mesas from an elevation of 1,200 to 2,450 meters amsl.	CNDDB reported occurrence near Bishop.
Calochortus excavatus	Inyo County star-tulip	--/--/1B.1	BLM sensitive	Found in mesic alkali meadows and seeps in chenopod scrub from an elevation of 1,300 to 2,000 meters amsl.	CNDDB reported occurrences throughout OVSA.
Crepis runcinata ssp. hallii	Hall's meadow hawksbeard	--/--/2B.1	--	Found in pinyon-juniper woodland and Mojavean desert scrub from an elevation of 375 to 2,100 meters.	CNDDB reported occurrences in the vicinity of Bishop and near Fish Slough.

Table 4.4-8 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Elymus salina	Salina Pass wild-rye	--/--/2B.3	--	Found in rocky sites within pinyon-juniper woodland from an elevation of 1,350 to 2,135 meters amsl.	CNDDB reported occurrence near the intersection of Fish Slough Road and Jean Blanc Road approximately 4.5 miles north of Bishop.
Eremothera boothii ssp. boothii	Booth's evening-primrose	--/--/2B.3	--	Found in Joshua Tree woodland and pinyon-juniper woodland from an elevation of 900 to 2,400 meters amsl.	CNDDB reported occurrences throughout OVSA.
Eremothera boothii ssp. intermedia	Booth's hairy evening-primrose	--/--/2B.3	--	Found in sandy flats, and steep loose slopes in great basin scrub and pinyon-juniper woodland at elevations from 900 to 2,400 meters amsl.	CNDDB reported occurrences throughout OVSA.
Erigeron calvus	bald daisy	--/--/1B.1	BLM sensitive	Known from only one location within Great Basin scrub habitat dominated by sagebrush and other desert scrub species at an elevation of 1,215 meters amsl.	CNDDB reported occurrence 4 miles north of Keeler at the foot of the Inyo Mountains.
Fimbristylis thermalis	hot springs fimbristylis	--/--/2B.2	--	Found in alkaline meadows near hot springs from an elevation of 110 to 1,340 meters amsl.	CNDDB reported occurrence at Keough hot springs and Fish Slough.
Ivesia kingii var. *kingii*	alkali ivesia	--/--/2B.2	BLM sensitive	Found in alkaline areas within meadows, Great Basin scrub, and playas.	CNDDB reported occurrence at Fish Slough and east of Laws.
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	--/--/2B.2	BLM sensitive	Found in Great Basin scrub, Sonoran Desert scrub, and desert dunes from an elevation of 700 to 1,615 meters amsl.	CNDDB reported occurrences throughout OVSA.

Table 4.4-8 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Lupinus pusillus var. *intermontanus*	intermontane lupine	--/--/2B.3	--	Found on sandy soils within Great Basin scrub from an elevation of 1,220 to 2,060 meters amsl.	CNDDB reported occurrence southeast of Big Pine.
Mentzelia torreyi	Torrey's blazing star	--/--/2B.2	--	Found in Great Basin scrub, Mohave Desert scrub, and pinyon-juniper woodland from an elevation of 1,170 to 2,835 meters amsl.	CNDDB reported occurrences throughout OVSA.
Oryctes nevadensis	Nevada oryctes	--/--/2B.1	--	Found in sandy soils and dunes in chenopod scrub and Mojavean desert scrub from an elevation of 1,200 to 1,500 meters amsl.	CNDDB reported occurrences throughout OVSA.
Phacelia inyoensis	Inyo phacelia	--/--/1B.2	BLM sensitive	Found in meadows and seeps from an elevation of 1,025 to 3,200 meters amsl.	CNDDB reported occurrences throughout OVSA.
Plagiobothrys parishii	Parish's popcornflower	--/--/1B.1	--	Found in mesic alkaline soils in Great Basin scrub and Joshua tree woodland at elevations from 750 to 1,400 meters amsl.	CNDDB reported occurrences throughout OVSA.
Ranunculus hydrocharoides	frog's-bit buttercup	--/--/2B.1	--	Found in marshes and swamps, specifically in or bordering shallow springs or freshwater marshes in the mountains from an elevation of 1,100 to 2,700 meters amsl.	CNDDB reported occurrence near Bishop.
Sidalcea covillei	Owens Valley checkerbloom	--/ Endangered/1B.1	BLM sensitive	Found in mesic soils near alkali meadows and seeps in Great Basin scrub at elevations from 1,100 to 1,300 meters amsl.	CNDDB reported occurrences throughout OVSA.

Table 4.4-8 (cont.)
RARE PLANTS KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE OWENS VALLEY STUDY AREA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Thelypodium integrifolium ssp. complanatum	foxtail thelypodium	--/--/2B.2	--	Found in meadows and seeps within Great Basin scrub having alkaline or sub-alkaline soils at elevations from 1,100 to 2,500 meters amsl.	CNDDB reported occurrence in the Owens Valley north of Black Rock Springs.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; OVSA = Owens Valley Study Area
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management

Southern Solar Energy Group

Trona Solar Energy Development Area

The Trona SEDA encompasses 7.1 square miles in the Searles Valley between the Argus Range to the west and the Slate Range to the east. Elevations range from approximately 2,100 feet amsl in the foothills of the Argus Range at the southwest corner of the site, to 1,650 feet amsl in the southeast corner of the site. The site is relatively flat, with slopes trending towards the east. The SEDA is largely undeveloped and characterized by desert scrub flats with ephemeral washes. The majority of the SEDA is BLM managed lands. The Trona Airport is a one runway airport located in the southeast portion of the SEDA. Private properties within the SEDA are developed with large-lot residential and commercial land uses. A 33kV SCE electrical line follows Trona Wildrose Road as it trends generally north-south through the SEDA. The community of Trona is located along SR 178 just south of the County border in San Bernardino County.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Trona SEDA is mapped entirely as alkali desert scrub and desert scrub. Some urban development is associated with the Trona Airport, and large-lot residential and commercial/industrial developments widely spaced throughout.

Sensitive Habitats and Protected Natural Areas

The USFWS National Wetlands Inventory (USFWS 2014b) identifies a freshwater pond and freshwater wetland associated with a development at Stockwell Mine Road. No protected natural areas are located within the SEDA, although it directly abuts Mohave ground squirrel Conservation Area.

Habitat Connectivity and Wildlife Corridors

The SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas. The SEDA is relatively flat with few washes. Although common wildlife may use the area to move between ranges, most species of wildlife would be expected to use areas to the north where the ranges are closer together.

Critical Habitat

There is no USFWS-designated critical habitat in the Trona SEDA; however, Inyo California towhee critical habitat is located in the Argus Mountains to the west of the SEDA. Inyo California towhee is currently listed as threatened under FESA but has been proposed for delisting, which was found by the USFWS to be warranted in November 2013 (78 FR 65938 65953).

Special Status Species

Table 4.4-9 presents the regionally occurring special status species that were identified during the desktop analysis as either being known to occur or having the potential to occur in the Trona SEDA (CNDDB 2014). Desert tortoise, prairie falcon, and Mohave ground squirrel have the potential to occur in the SEDA.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The Chicago Valley SEDA encompasses 2.4 square miles in the Chicago Valley between the Resting Spring Range to the west and the Nopah Range to the east. Elevations range from approximately 2,140 feet amsl at the base of the Resting Spring Range in the southwest corner of the site to 2,075 feet amsl in the southeast corner of the site. The relatively flat topography slopes gently towards a wash located in the western portion of the site, trending from the northwest to the southeast through the site. Ephemeral sheet flows have resulted in a network of minor braided channels where flows concentrate. The SEDA is largely undeveloped and characterized by desert scrub flats and gentle slopes. Chicago Valley Road travels northwest-southeast through the southwest portion of the SEDA. The unincorporated community of Chicago Valley is a small development of residential properties is located east of Chicago Valley Road, near the center of the SEDA. Shoshone is the nearest census-designated area with a population of 31 (2010 Census), located approximately 4.75 miles southwest of the Chicago Valley SEDA, on the opposite side of the Resting Spring Range.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Chicago Valley SEDA is mapped entirely as desert scrub. The vegetation density increases along areas of concentrated flows from the east. Minor ephemeral channels may be present.

Sensitive Habitats and Protected Natural Areas

The USFWS National Wetlands Inventory (USFWS 2014b) identifies a freshwater pond and freshwater wetland associated with a development at Stockwell Mine Road. Ephemeral washes exhibiting jurisdictional characteristics (e.g., bed and bank, ordinary high water mark) are subject to jurisdiction under the USACE and Regional Water Quality Control Board (RWQCB) and are considered sensitive habitats. The CNDDB spatial data mapping identifies the area as containing mesquite bosque throughout (CNDDB 2014). This habitat is classified as a special status natural community by CDFW.

Habitat Connectivity and Wildlife Corridors

The SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas. The SEDA is relatively flat with few washes. Although common wildlife may use the area to move between ranges, most species of wildlife would be expected to use areas to the north where the ranges are closer together.

Critical Habitat

There is no USFWS-designated critical habitat in the Chicago Valley SEDA.

Table 4.4-9
SENSITIVE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE TRONA SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State	Other*		
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS List and suitable habitat may be present; no reported occurrences in CNDDB in the Trona SEDA.
Bird					
Falco mexicanus	prairie falcon	--/--	CDFW WL	Breeds on cliffs near dry open terrain.	CNDDB reported occurrence within the Trona SEDA, non-specific polygon with a one mile radius covers entire SEDA.
Mammal					
Xerospermophilus mohavensis	Mohave ground squirrel	--/Threatened	BLM sensitive; DRECP Covered Species	Restricted to open desert scrub, alkali scrub, and Joshua Tree woodland habitats within the Mojave Desert.	CNDDB reported occurrences adjacent to the Trona SEDA, one adjacent to the northeast corner of the SEDA and one adjacent to the west side of the SEDA in Searles Valley.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
*BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
CDFW = California Department of Fish and Wildlife
WL = listed as Watch List by CDFW
DRECP = Desert Renewable Energy Conservation Plan

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Special Status Species

Table 4.4-10 presents the regionally occurring special status species that were identified during the desktop analysis as either being known to occur or having the potential to occur in the Trona SEDA (CNDDB 2014). Desert tortoise and four special status species of plants have the potential to occur in the SEDA.

Charleston View Solar Energy Development Area

The Charleston View SEDA encompasses 62 square miles in the Pahrump Valley, east of the Nopah Range in the Nopah Range Wilderness. Topography in this SEDA ranges from a basin-like depression near the County boundary, to jagged hills in the western portion of the SEDA. Elevations range from approximately 2,510 feet amsl near the northern portion of the site to 3,300 feet amsl at the peaks in the western portion of the site. The basin and low hills are characterized by desert scrub vegetation. The City of Pahrump, Nevada is the nearest city to the SEDA. It is approximately 18 miles north of the Charleston View SEDA, in the Pahrump Valley.

The majority of the SEDA is BLM managed lands, with a substantial portion of that in grazing allotment. A portion of this SEDA was previously planned for development under the Hidden Hills Solar Electric Generating System Project. The unincorporated community of Charleston View is located along Tecopa Road. The area has been developed with a network of roads sparsely developed with residential and commercial land uses.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Charleston View SEDA is mapped entirely as desert scrub. The SEDA is sparsely vegetated, with areas of disturbance largely associated with the community of Charleston View.

Sensitive Habitats and Protected Natural Areas

The USFWS National Wetlands Inventory (USFWS 2014b) identifies a dry lakebed and associated ephemeral washes occurring in the northern portion of the SEDA. This area is a topographically low point that likely collects runoff from the adjacent desert ranges following seasonal storm events.Habitat Connectivity and Wildlife Corridors

The SEDA contains desert tortoise priority connectivity areas as mapped by USFWS (Figure 4.4-4). These areas are in the northern half of the SEDA, and are considered essential to the species recovery. The SEDA does not contain other essential connectivity areas, missing links, or Important Bird Areas.

Critical Habitat

There is no USFWS-designated critical habitat in the Charleston View SEDA.

Special Status Species

Table 4.4-11 presents the regionally occurring special status species that were identified during the desktop analysis as either being known to occur or having the potential occur in the Charleston View SEDA (CNDDB 2014). Desert tortoise, prairie falcon, and 17 special status species of plants have the potential to occur in the SEDA.

<u>Sandy Valley Solar Energy Development Area</u>

The Sandy Valley SEDA encompasses 4.8 square miles in the Mesquite Valley, east of the Kingston Range in the Pahrump Valley Wilderness. The town of Sandy Valley in Nevada is adjacent to this SEDA. The site is relatively flat with elevations ranging from 2,675 to 2,610 feet amsl. Approximately half of the SEDA is BLM managed lands. Some rural residential development and agricultural land uses occur sparsely throughout.

Vegetation Communities and Habitats

Based on available spatial data and mapping, the Sandy Valley SEDA is mapped entirely as desert scrub and cropland.

Sensitive Habitats and Protected Natural Areas

Based on available spatial data, no sensitive habitats are identified in the SEDA.

Habitat Connectivity and Wildlife Corridors

The SEDA contains desert tortoise priority connectivity areas as mapped by USFWS (Figure 4.4-4). These areas are isolated polygons in the northern half of the SEDA, and are considered essential to the species recovery. The SEDA does not contain other essential connectivity areas, missing links, or Important Bird Areas.

Critical Habitat

There is no USFWS-designated critical habitat in the Sandy Valley SEDA.

Special Status Species

Table 4.4-12 presents the regionally occurring special status species that were identified during the desktop analysis as either being known to occur or having the potential to occur in the Sandy Valley SEDA (CNDDB 2014). Desert tortoise and three special status species of plants have the potential to occur in the SEDA.

Table 4.4-10
SENSITIVE SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE CHICAGO VALLEY SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in the CNDDB within the SEDA.
Plants					
Atriplex argentea var. *longitrichoma*	Pahrump orache	--/--/1B.1	--	Found in meadows and seeps within Great Basin scrub from an elevation of 1,200 to 1,700 meters amsl.	CNDDB reported occurrences approximately 1 mile southwest of Twelvemile Spring.
Eriogonum bifurcatum	forked buckwheat	--/--/1B.2	--	Found in sandy sites, saline flats and rolling hills within chenopod scrub from an elevation of 700 to 810 meters amsl.	CNDDB reported occurrences approximately 1 to 1.5 miles southwest of Twelvemile Spring and east of Resting Spring Range.
Eriogonum contiguum	Ash Meadows buckwheat	--/--/2B.3	--	Found in dry desert flats and lower slopes within Mojavean desert scrub from an elevation of 30 to 1,335 meters amsl.	CNDDB reported occurrence approximately 2 mile southwest of Twelvemile Spring.
Phacelia parishii	Parish's phacelia	--/--/1B.1	DRECP Covered Species	Found on alkaline flats and slopes or on clay soils within Mojavean desert scrub and playas from an elevation of 540 to 1,200 meters amsl.	CNDDB reported occurrences approximately 1 mile southwest of Twelvemile Spring.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**DRECP = Desert Renewable Energy Conservation Plan

Table 4.4-11
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE CHARLESTON VIEW SEDA

Scientific Name	Common Name	Status: Federal/ State/Rare Plant Rank*	Status: Other**	General Habitat Requirements	Rationale
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in the CNDDB in the SEDA.
Bird					
Falco mexicanus	prairie falcon	--/--	CDFW WL	Breeds on cliffs near dry open terrain.	CNDDB reported occurrence adjacent to the western boundary of the SEDA.
Plants					
Acleisanthes nevadensis	desert wing-fruit	--/--/2B.3	--	Found on rocky slopes and shale outcrops in Joshua tree woodland and Mojavean desert scrub from an elevation of 795 to 1,250 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Allium nevadense	Nevada onion	--/--/2B.3	--	Found on sandy or gravelly slopes in pinyon-juniper woodland habitats in the desert mountains from an elevation of 1,300 to 1,700 meters amsl.	CNDDB reported occurrence in the vicinity of Old Spanish Trail Highway and Aster Way.
Androstephium breviflorum	small-flowered androstephium	--/--/2B.2	--	Found in Mojavean desert scrub and desert dunes.	CNDDB reported occurrences throughout Pahrump Valley.
Astragalus nyensis	Nye milk-vetch	--/--/1B.1	--	Found in Mojavean desert scrub on sandy, gravelly, or slightly alkaline soils from an elevation of 790 to 815 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Astragalus preussii var. *preussii*	Preuss' milk-vetch	--/--/2B.3	--	Found in chenopod scrub and Mojavean desert scrub in gullied badlands where it is confined to selenium-bearing soils, elevations from 750 to 1,825 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.

Table 4.4-11 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE CHARLESTON VIEW SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Plants (cont.)					
Astragalus sabulonum	gravel milk-vetch	--/--/2B.2	--	Found on sandy or gravelly flats, washes, and roadsides within desert dunes, Mojavean desert scrub, and Sonoran Desert scrub from an elevation of -60 to 930 meters.	CNDDB reported occurrences throughout Pahrump Valley.
Astragalus tidestromii	Tidestrom's milk-vetch	--/--/2B.2	--	Found in washes with limestone soils within Mojavean desert scrub from an elevation of 600 to 1,585 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley and also in California Valley.
Chaetadelpha wheeleri	Wheeler's dune-broom	--/--/2B.2	--	Found in sandy sites within desert dunes, Great Basin scrub, and Mojavean desert scrub from an elevation of 770 to 1,900 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Cymopterus multinervatus	purple-nerve cymopterus	--/--/2B.2	--	Found in sandy or gravelly places within Mojavean desert scrub, pinyon and juniper woodland, and Joshua tree woodland from an elevation of 790 to 1,800 meters amsl.	CNDDB reported occurrence approximately 0.5 mile west of the CA/NV state line and 1 mile north of Old Spanish Trail Highway.
Ephedra torreyana	Torrey's Mormon-tea	--/--/2B.1	--	Found on silty soils in valley bottoms within Great Basin scrub at an elevation of 810 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Eriogonum bifurcatum	forked buckwheat	--/--/1B.2	--	Found on saline flats and rolling hills within chenopod scrub at an elevation of 700 to 810 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Eriogonum contiguum	Ash Meadows buckwheat	--/--/2B.3	--	Found on sandy sites in dry desert flats and lower slopes within Mojavean desert scrub from an elevation of 30 to 1,335 meters amsl.	CNDDB reported occurrences in Pahrump Valley in the vicinity of Old Spanish Trail Highway and Aster Way.

Table 4.4-11 (cont.)
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE CHARLESTON VIEW SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Plants (cont.)					
Mentzelia pterosperma	wing-seed blazing star	--/--/2B.2	--		CNDDB reported occurrences in Pahrump Valley.
Mentzelia torreyi	Torrey's blazing star	--/--/2B.2	--	Found in Great Basin scrub, Mohave Desert scrub, and pinyon-juniper woodland from an elevation of 1,170 to 2,835 meters amsl.	CNDDB reported occurrences adjacent to but not within the SEDA.
Peteria thompsoniae	spine-noded milk-vetch	--/--/2B.3	--	Found on clay and gypseous substrates within Mojavean desert scrub from an elevation of 770 to 1,524 meters amsl.	CNDDB reported occurrences in California and Pahrump Valley.
Phacelia pulchella var. *goodingii*	Goodding's phacelia	--/--/2B.3	--	Found on clay, alkaline soils within Mojavean desert scrub from an elevation of 765 to 1,000 meters amsl.	CNDDB reported occurrences throughout Pahrump Valley.
Sclerocactus johnsonii	Johnson's bee-hive cactus	--/--/2B.2	--	Found on granitic soils within Mojavean desert scrub from an elevation of 500 to 1,200 meters amsl.	CNDDB reported occurrences in Pahrump Valley.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**BLM sensitive = special status plant or animal under jurisdiction of the US Bureau of Land Management
CDFW = California Department of Fish and Wildlife
WL = listed as Watch List by CDFW
DRECP = Desert Renewable Energy Conservation Plan

Table 4.4-12
SPECIAL STATUS SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN THE SANDY VALLEY SEDA

Scientific Name	Common Name	Status		General Habitat Requirements	Rationale
		Federal/ State/Rare Plant Rank*	Other**		
Reptile					
Gopherus agassizii	desert tortoise	Threatened/ Threatened	DRECP Covered Species	Found in desert habitats. Most common in desert scrub, desert wash and Joshua Tree habitats.	Included on the USFWS list and suitable habitat may be present; no reported occurrences in the CNDDB in the SEDA.
Plants					
Astragalus preussii var. *preussii*	Preuss' milk-vetch	--/--/2B.3	--	Found in chenopod scrub and Mojavean desert scrub in gullied badlands where it is confined to selenium-bearing soils, elevations from 750 to 1,825 meters amsl.	CNDDB reported occurrences in Mesquite Valley.
Eriogonum bifurcatum	forked buckwheat	--/--/1B.2	--	Found on saline flats and rolling hills within chenopod scrub at an elevation of 700 to 810 meters amsl.	CNDDB reported occurrence near the intersection of Long Road and Ekenberg Road.
Phacelia pulchella var. *gooddingii*	Goodding's phacelia	--/--/2B.3	--	Found on clay, alkaline soils within Mojavean desert scrub from an elevation of 765 to 1,000 meters amsl.	CNDDB reported occurrence in the southeast corner of the SEDA near the San Bernardino County line.

Sources: BLM 2013, 2010; CDFW 2014; USFWS 2014a
CNDDB = California Natural Diversity Database; SEDA = Solar Energy Development Area
USFWS = US Fish and Wildlife Service
*Rare Plant Rank
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California but more common elsewhere
.1 = seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = fairly endangered in California (20-80% occurrences threatened)
.3 = not very endangered in California (<20% of occurrences threatened)
**DRECP = Desert Renewable Energy Conservation Plan

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4.4.1.12 Regulatory Framework

Federal Regulations

Federal Endangered Species Act (16 USC Section 1531 et seq.; 50 CFR 17.1 et seq.)

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a 'take' under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 7 and 10(a) of the FESA regulate actions that could harm or harass endangered or threatened species. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of the listed species is secondary to, and not the purpose of, an otherwise lawful activity. A conservation plan demonstrating how the take would be minimized and what steps taken would ensure the listed species' survival must be submitted for the issuance of Section 10(a) permits. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major activity if it may affect listed species.

Migratory Bird Treaty Act (16 USC Section 703-712)

The MBTA of 1918, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird species listed in 50 CFR Section 10.13, including feathers or other parts, nests, eggs or products, expect as allowed by implementing regulations (50 CFR 21). Project related disturbances must be reduced or eliminated during critical phases of the nesting cycle.

The Bald and Golden Eagle Protection Act (16 USC Section 668)

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act. It is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest, or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

Clean Water Act (33 USC 1252-1376)

Any person, firm, or agency planning to alter or work in "waters of the US" including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the CWA (33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the US without a permit from USACE (33 USC 403). The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the US must obtain a state certification that the discharge complies with other provisions of CWA. The RWQCB administers the certification program in California, and may require State Water Quality Certification before other permits are issued.

Section 402 of the CWA establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the US.

Section 404 of the CWA establishes a permit program administered by USACE regulating the discharge of dredged or fill material into waters of the US (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there is no practicable alternative that would have less adverse impacts.

Executive Order 11990, Protection of Wetlands (May 24, 1977)

This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. Project impacts on wetlands must be identified in the environmental document for projects with federal actions or approvals. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included and documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for individual projects.

National Environmental Policy Act of 1969

NEPA established national policies and goals for the protection of the environment. NEPA directs all federal agencies to give proper consideration of the environment prior to commencing any federal action that may significantly affect the environment.

US Department of the Interior Bureau of Land Management

The BLM manages large rural land areas, including land that is environmentally sensitive. The BLM governs uses that are allowed on land that it manages, striving to balance environmental protection and conservation goals with other uses such as recreation, and grazing. The BLM recognizes special management areas and other designations within lands under its jurisdiction, including ACECs and DWMAs.

US Army Corps of Engineers

The USACE has regulatory authority over waters of the US under Section 404 of the CWA. Waters of the US are defined as: all waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (33 CFR Part 328). With non-tidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction extends to the OHWM – the line on the shore established by fluctuations of water and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Wetlands are defined in 33 CFR Part 328 as:

> *those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*

Federal jurisdiction is dependent upon a demonstrated nexus between the subject water feature and navigable waters or interstate commerce.

State Regulations

California Endangered Species Act (Fish and Game Code Sections 2050-2098)

CESA protects California's rare, threatened, and endangered species. The California Fish and Wildlife Commission is responsible for maintaining lists of threatened and endangered species under the CESA. CESA prohibits the take of listed and candidate (petitioned to be listed) species. "Take" under California law means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (Fish and Game Code, Section 86). CDFW can authorize take of a state-listed species under Section 2081 of the Fish and Game Code if the take is incidental to an otherwise lawful activity, the impacts are minimized and fully mitigated, funding is ensured to implement and monitor mitigation measures, and CDFW determines that issuance would not jeopardize the continued existence of the species. A CESA permit must be obtained if a project will result in the take of listed species, either during construction or over the life of the project. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

<u>Protected Furbearing Mammals (California Code of Regulations Title 14, Section 460)</u>

Certain fur-bearing mammals in California may not be taken at any time. These include fisher, marten, river otter, desert kit fox, American badger, and red fox.

<u>California Code of Regulations Title 14 and Fish and Game Code</u>

The official listing of endangered and threatened animals and plants is contained in California Code of Regulations (CCR) Title 14 Section 670.5. A state candidate species is one that the Fish and Game Code has formally noticed as being under review by CDFW to include in the state list pursuant to Sections 2074.2 and 2075.5 of the Fish and Game Code.

Legal protection is also provided for wildlife species in California that are identified as “fully protected animals.” These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species. CDFW has informed non-federal agencies and private parties that they must avoid take of any fully protected species in carrying out projects. However, the recently signed Senate Bill 618 (2011) allows the CDFW to issue permits authorizing the incidental take of fully protected species under the CESA, so long as any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (Fish and Game Code Section 2835).

<u>California Environmental Quality Act</u>

Under the CEQA of 1970 (PRC Section 21000 et seq.), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special status species (PRC Section 21001(c)). These “special status” species generally include those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under the criteria included State CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed in this study regardless of whether they are afforded protection through any other statute or regulation. The CNPS inventories the native flora of California and ranks species according to rarity; plants ranked as 1A, 1B, and 2 are generally considered special status species under CEQA.[1]

Although threatened and endangered species are protected by specific federal and state statutes, State CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur. Thus CEQA provides an agency with the ability to protect a species from the potential impacts of

[1] The CNPS rare plant ranking system can be found online at <http://www.cnps.org/cnps/rareplants/ranking.php>

a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act (Fish and Game Code Sections 1900-1913)

The California Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900-1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use other than changing from one agricultural use to another, which allows CDFW to salvage listed plants that would otherwise be destroyed.

Nesting Birds (Fish and Game Code Sections 3503, 3511, and 3800)

Fish and Game Code Sections 3503 and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Section 3511 lists birds that are "fully protected." those that may not be taken or possessed except under specific permit.

Noxious Weeds

CDFA Code Section 403 directs the CDFA to prevent the introduction and spread of injurious pests including noxious weeds.

CDFA Code Section 7271 designates the CDFA as the lead department in noxious weed management responsible for implementing state laws concerning noxious weeds. Representing a statewide program, noxious weed management laws and regulations are enforced locally in cooperation with the County Agricultural Commissioner.

Under state law, noxious weeds include any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed (CDFA Code Section 5004).

California Desert Native Plant Protection Act

California Food and Agriculture Code, Divisions 23, Chapter 3, Section 80071-80075, affords protection to desert native plants under the California Desert Native Plants Act passed in 1981. Sections 1925-1926 of the Fish and Game Code allow enforcement of the act. The California Desert Native Plants Act prohibits the harvesting, transport, sale, or possession of designated native desert plants except for scientific or educational purposes (under a permit), or if the person has a valid permit, or wood receipt, and the required tags and seals. The provisions are applicable within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal Clean Water Act (CWA). The Porter-Cologne Act requires the State Water Resources Control Board (SWRCB) and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill materials to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, or other approvals.

Lake and Streambed Alteration Program (Fish and Game Code Sections 1600-1616)

Diversions or obstructions of the natural flow of, or substantial changes or use of material from the bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW, pursuant to Section 1602 of the Fish and Game Code. The CDFW requires notification prior to commencement of any such activities, and a Streambed Alteration Agreement pursuant to Fish and Game Code Sections 1601-1603, if the activity may substantially adversely affect an existing fish and wildlife resource.

Local and Regional Plans

Inyo County General Plan

The Biological Resources Element in the General Plan (2001, as amended) contains goals and policies regarding biological resources that may be applicable to future development in the SEDAs as outlined below:

Biological Resources Element

- Goal BIO-1: Maintain and enhance biological diversity and healthy ecosystems throughout the County.

- Policy BIO-1.1: Regulatory Compliance. The County shall review development proposals to determine impacts to sensitive natural communities, of both local and regional concerns, and special status species. Appropriate mitigation measures will be incorporated into each project, as necessary.

- Policy BIO-1.2: Preservation of Riparian Habitat and Wetlands. Important riparian areas and wetlands, as identified by the County, shall be preserved and protected for biological resource value.

- Policy BIO-1.6: Wildlife Corridors. The County shall work to preserve and protect existing wildlife corridors where appropriate.

- Policy BIO-1.7: Noxious Weeds. Avoid activities that will promote the spread of noxious weeds in the County.

4.4.1.13 Habitat Conservation Plans

There are four applicable HCPs within the County. The DRECP and the West Mojave Plan are proposed and have not been approved or adopted. The DRECP is a multi-county, multi-jurisdictional plan. Inyo County has been invited to be a signatory to the DRECP, although no decision regarding participating in the plan has been made by the County. The West Mojave Plan would only apply to actions on BLM lands within the plan area. The OVLMP HCP (LADWP 2010) is an HCP incorporated into the LADWP's OVLMP for LADWP lands in Owens Valley. The OVLMP HCP applies to actions on LADWP lands within the plan area.

Desert Renewable Energy Conservation Plan

The DRECP is a proposed HCP and Natural Resource Conservation Plan. The preparation of the DRECP is a multiagency effort that is currently underway and is intended to provide protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects in the California deserts. The DRECP is focused on the desert regions and adjacent lands of seven California counties – Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. It is being prepared as a collaborative effort between the CEC, CDFW, BLM, and USFWS. The Draft DRECP and EIR/EIS were released for public review in September 2014. Because this plan is undergoing public review, it has not yet been adopted by any of the participating agencies. The portions of the County included in the DRECP area include the much of the southeastern portion of the County as well as areas along the US 395 corridor, including Owens Lake (refer to Figure 4.4-3). All of the SEDAs, except the Laws SEDA, are located within the proposed boundaries of the DRECP. Over half of the OVSA (the southern portion) is also located within the boundaries of the DRECP.

Should the County choose to participate in the DRECP as a signatory agency, then implementation of the DRECP may further reduce impacts to biological resources analyzed in this PEIR

West Mojave Plan

The West Mojave Plan is a proposed HCP and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other plants and animals and the natural communities of which they are part, and (2) provides a streamlined program for complying with the requirements of the CESA and FESA (BLM 2005). This plan is an amendment to the CDCA Plan (BLM 1980) which covers the 25-million acre planning area in southern California designated by Congress in 1976 through the FLPMA. This planning area includes most of the County – from the White and Inyo Mountains, eastward, and south of Owens Lake. The previously described ACECs were designated as part of the CDCA Plan.

The 9,359,070-acre planning area for the West Mojave Plan includes 3,263,874 acres of BLM-administered public lands; 3,029,230 acres of private lands; and, 102,168 acres of lands administered by the state of California within portions of Inyo, Kern, Los Angeles, and San Bernardino Counties.

The BLM issued a ROD based on the West Mojave Plan EIS/EIR. The ROD for the West Mojave Plan /Amendment to the CDCA Plan was signed in March 2006. Other agencies did not adopt the HCP proposed in the West Mojave Plan to cover their jurisdictions, and therefore the adopted plan only applies to public lands. The ROD addressed only BLM's amendment of the CDCA Plan, and it did not include actions proposed by state and local governments for non-federal lands, except when specifically identified (BLM 2006). The HCP has not been completed and would require greater specificity for local governments to obtain incidental take permits under the CESA and FESA (BLM 2006).

In September of 2009, the Court issued a summary judgment remanding the route designations made in the plan, but keeping other parts of the plan, primarily related to the conservation of species, in place. A remedy order based on this judgment was issued in January, 2011, and identified the West Mojave route network, with few changes, would be in place until the remedy order is satisfied. To satisfy the remedy order, new route designations must be completed, consistent with the court's order. This is the basis for the supplemental West Mojave Plan EIS and specific travel management plans now under development. A total of eight travel management plans are being prepared to designate specific routes in various portions of the West Mojave and implement the route network.

The West Mojave Plan applies to BLM lands in the southwestern portion of the County. The Mohave ground squirrel Conservation Area is a BLM-designated DWMA under the plan, a portion of which occurs in the planning area within the County. Along with the desert tortoise, Mohave ground squirrel is a target species of conservation concern for the plan. This area was designated to protect Mohave ground squirrel habitat in a core area of its current distribution, but applies only to BLM lands. The plan area encompasses portions of the Owens Lake SEDA and all of the Rose Valley, Pearsonville, and Trona SEDAs.

Owens Valley Land Management Plan Habitat Conservation Plan

The OVLMP HCP (LADWP 2010) was prepared by the LADWP pursuant to the 1997 MOU between LADWP, the County, CDFW, SLC, the Sierra Club, and the Owens Valley Committee. It provides management direction for resources on all LADWP-owned lands in the County, excluding the LORP area. The County board approved the plan in 2010 (LADWP 2012). The HCP covers all city of LADWP-owned lands in Inyo and Mono Counties from the Upper Owens River south to Owens Dry Lake (LADWP 2010). It is a habitat-based HCP addressing riverine-riparian areas, and the target species (Owens pupfish, Owens tui chub, least Bell's vireo, yellow-billed cuckoo, southwestern willow flycatcher, and Swainson's hawk) are used to manage the habitat. The HCP was prepared as a separate planning process from the OVLMP and will be incorporated into the plan as an amendment. This planning area falls within the Laws and Owens Lake SEDA, and the OVSA.

Owens Lake Habitat Management Plan

The LADWP prepared the Owens Lake Habitat Management Plan (OLHMP) for the Owens Lake Dust Mitigation Project (LADWP 2010). The OLHMP was prepared to serve as a guide for compatibility between construction, maintenance, and operational needs of the dust mitigation project and the needs of resident and migratory wildlife resources utilizing the Owens Lake Dust Control Area. The overall goal of the plan is to avoid direct and cumulative impacts to native wildlife communities that may result from the dust mitigation project. Direct impacts to wildlife could include the death of individuals, nests, eggs, dependent young, or the direct loss of habitat. Cumulative impacts are a result of incremental changes to the landscape that may result in a decrease in habitat quality, increases in disturbance, or increases in exposure to toxins. These cumulative impacts may cause a decrease in reproductive success, loss of body condition, or result in local population changes or use patterns due to decreases in habitat suitability or productivity.

In addition to avoiding direct and cumulative impacts, the OLHMP will serve to guide future management in an effort to maintain wildlife habitat conditions within the framework of the dust mitigation project. The OLHMP applies to all emissive areas subject to dust control measure on lands owned by either LADWP or the SLC. The purpose of the OLHMP is primarily to protect habitat for snowy plover and other water birds. Mitigation measures incorporated into the OLHMP include the management of 1,000 acres in perpetuity for shorebirds and Snowy Plovers and the creation of 145 acres of habitat shallow flood habitat suitable for shorebird foraging. Other actions being undertaken to prevent impacts to wildlife resources in the bed of Owens Lake include minimization of construction disturbance, monitoring of the levels of toxins in the environment, monitoring wildlife mortality and disease, monitoring populations of introduced predators, monitoring and controlling noxious weeds, managing salinity levels and water quality, maintaining a base population of snowy plovers, and vegetation enhancement.

4.4.2 Significance Thresholds

The threshold for determining the significance that the effects of a proposed action would have is based on the biological resources present or potentially present within the proposed project area in consideration of the proposed project description.

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on biological resources if it would:

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

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

- Have a substantial adverse effect on federally protected wetlands or other waters of the US as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan or other approved local, regional, or state HCP.

4.4.3 Impact Analysis

Although related infrastructure for the utility scale and distributed generation solar facilities as well as the community scale solar facilities can occur throughout the County, it was not feasible to evaluate the possible range of impacts countywide. Therefore, the impact assessment for biological resources focuses on the potentially significant effects of the REGPA on biological resources contained within the SEDAs and the OVSA. The methods for determining the significance of these impacts compare a regional-level analysis of the potential future development under the REGPA to existing biological resources within the SEDAs and the OVSA. Although future development in SEDAs in the Eastern Solar Energy Group would be constructed in concert with transmission lines and other facilities constructed in Nevada, the regulatory authority of the REGPA is limited to the County. Therefore, impacts to biological resources in Nevada as a result of those facilities are not addressed in this PEIR.

In evaluating the significance of the impacts to the biological resources, it is generally the case that the greater the change from existing conditions, the more significant the impact to the biological resource. The development of solar facilities may affect biological resources, either by directly affecting a habitat or through indirect effects to adjacent areas. The County contains a diverse landscape supporting a variety of biological resources; therefore, the potential for impacts to those resources exists. The locations of the SEDAs were chosen specifically to minimize potential impacts to biological resources as described in Section 3 of this PEIR. Guiding solar development to previously disturbed areas with limited biological value within each SEDA and the OVSA would further lessen the affects to existing biological resources.

A detailed evaluation of potential impacts to biological resources that may occur as a result of this PEIR is not feasible because the locations of future solar development(s) have not been determined. Therefore, this PEIR includes a mitigation measure that requires the preparation of a separate biological technical report prior to the implementation of any project under this PEIR. The implementing agency will be responsible for conducting appropriate project-level environmental review and will be responsible for implementation of mitigation measures for significant effects on the environment.

The following analysis of impacts to biological resources primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation, and community scale, facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provision for development of small scale solar energy facilities; however, due to their small size (e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for potential environmental impacts. Therefore, all future solar energy projects would be evaluated on a project specific basis to assess specific impacts to biological resources against the program level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the biological resources evaluation conducted for the project.

General impacts to biological resources that could occur throughout the project area (all of the SEDAs and the OVSA) are discussed below followed by a specific discussion of potential impacts for each SEDA and the OVSA.

4.4.3.1 Project Level Impacts to Biological Resources

Ground Disturbance or Vegetation Trimming or Removal

Future construction and maintenance of solar projects under the REGPA resulting in ground disturbance or vegetation trimming or removal would have the potential to impact special status species or sensitive natural communities. Direct or indirect impacts to special status species or loss/degradation of habitat would be a significant impact.

Impacts to Groundwater Dependent Vegetation

Future construction and maintenance of solar projects under the REGPA resulting in groundwater pumping would have the potential to adversely affect groundwater dependent vegetation communities. Impacts to groundwater dependent vegetation communities such as reduction in size of these communities, changes in plant composition in these communities, or conversion of these communities to other types of habitats would be a significant impact.

Impacts to Rare Plants

Future construction and maintenance of solar projects under the REGPA could result in the direct loss or indirect disturbance of special status plant species individuals or populations occurring within the project area. Direct impacts could include trampling, clearing or grading of habitat occupied by special status plant species, or other activities that result in habitat removal. Indirect impacts could include spills or runoff of chemicals or other toxic substances from construction areas and/or equipment that enter areas occupied by populations of rare plants adjacent to construction areas, alteration of local drainage patterns, or adverse effects from dust or windborne contaminants. Direct and indirect impacts on special status plant species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. In addition, construction-related disturbances may allow the introduction or spread of invasive plants which compete with native plants and degrade the habitat.

Direct or indirect impacts to special status plant species resulting in loss of individuals or loss/degradation of habitat would be a significant impact.

General Impacts to Special Status Wildlife

Impacts to special status wildlife species could occur during construction and/or operation of the future solar developments under the REGPA. General impacts to special status wildlife species are presented here, and more detailed discussion is provided in following sections with considerations pertinent to certain species and/or life forms.

General Construction Impacts

Habitat Disturbance

Biological communities within the construction footprint of solar developments implemented under the REGPA would be reduced or altered through habitat modifications including clearing, trampling or grading vegetation, changes to hydrology, alterations to the existing soil conditions, and filling or removing wetlands or sensitive habitats. Habitat modifications can result in the loss or adverse constriction of migration and wildlife movement corridors. Although habitats adjacent to solar energy projects might remain unaffected, the nearby disturbance on the project site might deter special status species from using habitat near the proposed project. Habitat modifications may also provide increased opportunities to predators (e.g., increased litter or water may attract coyotes, ravens or feral dogs, and structures provide perch sites to raptors). Alternately, habitat modifications may also result in changes to abundance of prey or forage species as a result of ground disturbance and vegetation removal.

Wildlife Mortality, Injury or Displacement

Individuals of special status species occurring within the construction footprint during construction could be injured, killed, or disturbed by construction activities. Special status wildlife species occupying underground burrows (e.g., desert tortoise, kit fox, burrowing owl) could be killed or displaced from the collapse of their burrows resulting from soil compaction. Site clearing and grading can remove vegetation resulting in a loss of dispersal, breeding or foraging habitat, as well as the direct removal of active bird nests. The movement of equipment and vehicles through the project area could negatively affect wildlife by collisions, or increased noise and dust. The noise and disturbance associated with construction-related activities can negatively affect nesting birds and may lead to abandoned eggs or young and subsequent nest failure for nesting raptors and other special status nesting birds. Construction related activities and the associated human presence increase the risk of fire from igniting sources such as vehicles, cigarettes, welding, and increased fuels from invasive plant species.

Introduction or Spread of Invasive Species

Habitat modification also provides opportunities for the introduction or spread of non-native, invasive plant species resulting from soil disturbance, native vegetation removal, and introduction of the species from construction equipment or seed mixes. Invasive species may compete with native species, affecting the viability of native species populations, and may also alter the habitat by making it difficult for wildlife to negotiate the landscape. As previously mentioned, the spread of invasive plant species may also increase the risk of fire by providing an increased fuel source. In arid environments, invasive species of plants often grown more densely than native species and may burn hotter thereby increasing the risk and impacts of fire.

General Operational Impacts

Operation of future solar facilities under the REGPA could result in long term persistent impacts to special status wildlife species. These include disturbance to common and sensitive wildlife from vehicle traffic, increased human presence, facility maintenance (includes equipment repairs and washing panels and mirrors, weed and vegetation control, etc.), operational noises associated with daytime operations and nighttime maintenance activities, nighttime lighting and collisions. Death or injury to wildlife as a result of operations would be potentially significant and mitigation would be necessary. Refer to specific wildlife impacts and considerations for additional operational impacts.

Construction of heliostat fields involves the placement of cylindrical pipes to support the structures. Vertically placed, open-topped pipes associated with future solar developments pose a threat to birds falling in from perching or nests placed at the opening, or entering in search of nesting cavities or food. Birds (and other animals such as bats, small reptiles, other small mammals) that have descended into vertical pipes may become entrapped and die from starvation and exposure (Brean 2011; American Bird Conservancy 2011; Audubon California 2013).

Death or injury to special status wildlife as a result of construction and/or operations would be a significant impact, and mitigation would be necessary.

Specific Wildlife Impacts and Considerations

Following are potential impacts to specific species or wildlife that could occur as a result of implementation of the REGPA based on their life form, status, known potential to occur in the project area, and regulatory considerations.

Impacts to Special Status Fish

Special status species of fish have the potential to occur in the Laws and Owens Lake SEDAs and the OVSA. All four special status species of fish with the potential to occur are endemic to the Owens Valley, and occur in the Owens River and its tributaries.

Fish are subject to impacts resulting from direct and indirect impacts to their habitat. It is unlikely that future construction of solar projects under the REGPA would impact the Owens River; however, construction could occur in or adjacent to minor tributaries. If the appropriate measures are not taken, the aquatic habitat could be removed and/or degraded. Typical impacts to fish are the result of erosion, sedimentation, and turbidity, loss of habitat and/or the suitable substrates or vegetation necessary for spawning and life functions, and degradation of habitat from hazardous materials and chemical spills.

Although in water work is not anticipated, construction related activities involving ground disturbance have the potential to result in discharges to nearby waterways, resulting in increased sediment, primarily in the form of fine sediment, which have been reported to lead to changes in spawning bed composition, decreased benthic vertebrate abundance, increased stress responses in fish, and increased fish mortality (Burns 1970; Cordone and Kelly 1961; Moyle 2002; Redding et al. 1987; Reid and Anderson 1999). At moderate levels, turbidity reportedly has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish (National Marine Fisheries Service 2003). Hazardous materials associated with project construction and operation have the potential to enter waterways either through direct spills or as runoff from the project site. Impacts to fish as a result of these impacts to water quality would be a significant impact. BMPs to control hazardous materials and spills, and stormwater runoff would be necessary during construction and operation.

Direct or indirect impacts to special status fish species resulting in injury or mortality of individuals or loss/degradation of habitat would be a significant impact.

Impacts to Special Status Amphibians including Sierra Nevada Yellow-Legged Frog, Inyo Mountains Slender Salamander, Owens Valley Web-Toed Salamander, and Northern Leopard Frog

Potential habitat for Sierra Nevada yellow-legged frog exists in OVSA. Potential habitat for the Inyo Mountains slender salamander occurs within suitable habitat in the Laws and Owens Lake SEDAs and the OVSA. Potential habitat for Owens Valley web-toed salamander occurs within the OVSA. Potential habitat for northern leopard frog occurs within the Laws SEDA and the OVSA. Impacts to special status amphibians could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to suitable aquatic habitat for these species. Direct impacts to special status amphibians could occur as a result of injury or mortality during habitat removal or as a result of coming into direct contact with construction equipment or personnel. Indirect impacts could occur as a result of water quality degradation or destruction of habitat used by these species during certain phases of their life history (i.e., loss of refugia adjacent to aquatic habitat).

Impacts to special status amphibians leading to injury or mortality of individuals or degradation or loss of their habitats would be a significant impact.

Impacts to Desert Tortoise

Potential habitat for desert tortoise occurs within all SEDAs and the OVSA, however, this species is not expected to occur north of Owens Lake. Desert tortoises are subject to the general construction and operation impacts described above. Additionally, actions taken to minimize the effects to the individuals and their population involve regulatory considerations and pose inherent risks to the species. Desert tortoises occurring within a project site would need to be translocated by a permitted individual prior to project construction. Translocation may adversely affect the relocated individuals and the existing residents at the designated recipient area. Translocation of desert tortoises must occur in areas where the species is not exposed to ongoing threats and the relocation site must be able to provide for the long term conservation of the species. SEDAs in the Eastern Solar Energy Group have the greatest potential to be occupied by desert tortoise, and the Charleston View and Sandy Valley SEDAs contain USFWS-designated priority connectivity areas for the species. Individuals in these areas likely contain home ranges spanning the state boundaries. While translocation to sites in Nevada may allow some of the individuals to maintain a portion of their home range, transporting the state-listed desert tortoise across the state border may pose legal and regulatory challenges for the state of California and may not be feasible.

In addition to translocation, desert tortoise exclusionary fencing would be installed in project sites containing this species. However, it is likely that some juvenile tortoises and eggs would be overlooked and subject to mortality from project activities within the fenced enclosure during construction and operation of the facility.

Although desert tortoises are capable of long distance dispersal, they are essentially corridor dwellers that complete their entire life history cycle within a relatively small area (200 to 640 acres). They are slow moving, and are therefore highly subject to injury or mortality from encounters with humans and their pets. Individuals of this species are commonly taken from the wild as pets. Increased access to suitable habitat from the construction of access roads, and the increased presence humans as workers or recreationalists improves the likeliness of the presence of dogs or other pets that can harm tortoises, or individuals who may remove the tortoise from the wild. Desert tortoises are known to shelter under parked vehicles and be killed, injured, or harassed when the vehicle is moved.

As previously mentioned, the Charleston View and Sandy Valley SEDAs contain USFWS-designated priority connectivity areas for the species. Removal of these connectivity areas, or any suitable desert tortoise habitat would result in a significant impact, and mitigation would be required. Up to an estimated 3,300 acres of suitable habitat for desert tortoise could be impacted in the Eastern Solar Energy Group where this species is most likely to occur if the maximum allowable developable acreage was developed (see Table 3-1) and all of the developable habitat was habitat for desert tortoise. To fully mitigate the loss of desert tortoise habitat under CESA, the CDFW usually requires a mitigation ratio greater than 1:1 for compensation lands (i.e., acquisition of more than one acre of compensation lands for every acre lost), and typically uses a 3:1 ratio or higher for good quality habitat such as that found in portions (i.e., northeastern portions) of the project site. The higher ratio reflects value of the existing habitat and the limits to increases in carrying capacity that can be achieved on the acquired lands, even with implementation of all possible protection and enhancement measures. Depending on the quality of habitat that is lost and the habitat conditions of the land that is acquired, it is difficult to sufficiently increase the carrying capacity of the acquisition lands to completely offset habitat loss without relying on additional acreage to increase the numbers of desert tortoise that can be supported on the mitigation lands.

Direct or indirect impacts to desert tortoise resulting in injury or mortality of individuals or loss/degradation of habitat would be a significant impact.

Impacts to Special Status Reptiles Including Northern Sagebrush Lizard and Mojave Fringe Toed Lizard

Potential habitat for the northern sagebrush lizard occurs within the Rose Valley and Owens Lake SEDAs. Potential habitat for Mojave fringe-toed lizard occurs within the Owens Lake SEDA. Impacts to non-listed reptiles could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to suitable desert scrub habitat for these species. Direct impacts to non-listed reptiles could occur as a result of injury or mortality during habitat removal or as a result of coming into direct contact with construction equipment or personnel. Indirect impacts could occur as a result of destruction of foraging, dispersal or refugia habitat used by these species.

Impacts to non-listed reptiles leading to injury or mortality of individuals or degradation or loss of their habitats would be a significant impact.

Impacts to Swainson's Hawk

Nesting and foraging habitat for Swainson's hawk occurs within the Laws and Rose Valley SEDAs and the OVSA (located within the Western Solar Energy Group) and this species is known to occupy portions of those locations. Impacts to Swainson's hawk could occur as a result of implementation of the REGPA if solar development occurred within nesting or foraging habitat for this species. Construction-related activities could potentially disturb nesting Swainson's hawks on or adjacent to construction sites as well as result in the loss of Swainson's hawk foraging habitat. CDFW considers properties five or more acres in size within 1 mile of a nest that has been active within the past five years to be suitable foraging habitat for Swainson's hawk (CDFG 1994). The total allowable developable acres for the Western Solar Energy group is 1,500 acres; therefore, if future solar development occurs in the Laws and Rose Valley SEDA and OVSA, there is the potential for up to 1,500 acres of potential nesting and/or foraging habitat for Swainson's hawk to be lost. This is likely a significant over-estimation of the potential impacts to Swainson's hawk foraging habitat because much of the land would not be suitable foraging habitat or within close proximity to a nest.

Swainson's hawk responses to nest disturbance vary with each nesting pair and the timing, regularity, and nature of the disturbance. Although some researchers have described disturbed nest sites that successfully fledge young (Estep 1989; England et al. 1995), others have recorded nest abandonment in response to human activity, especially during nest building and incubation (Bent 1937; Stahlecker 1975). In addition to nest abandonment, significant disturbances near hawk nests may interfere with parental care and feeding of young in a way that reduces nest success. Operation of the solar facilities could result in disturbance to Swainson's hawk if this species nested in proximity of one of the facilities.

Loss of Swainson's hawk nesting or foraging habitat or nest disturbance would be a significant impact.

Impacts to Burrowing Owl

Nesting and foraging habitat for burrowing owl occurs within the Laws, Owens Lake, and Rose Valley SEDAs and the OVSA (located within the Western Solar Energy Group) and this species is known to occupy portions of those locations. Impacts to burrowing owl could occur as a result of implementation of the REGPA if solar development occurred within nesting or foraging habitat for this species. Potential impacts to burrowing owls include nest disturbance, loss of nesting habitat, and loss of foraging habitat. Construction-related activities could potentially disturb nesting burrowing owls on or adjacent to construction sites as well as result in the loss of foraging habitat. Earth-moving activities could potentially trap or injure owls in their burrows, and disturbance near nests could potentially cause nest abandonment. Up to 1,500 acres of potential foraging habitat for burrowing owl could be lost in the Laws, Owens Lake, and Rose Valley SEDAs and the OVSA if all of the total allowable developable acres for the Western Solar Energy Group were developed within suitable foraging habitat for burrowing owl and were within close proximity to a nest. This is likely a significant over-estimation of the potential impacts to burrowing owl habitat because much of the land would not be suitable foraging habitat or within close proximity to a nest.

If solar development occurred in proximity to burrowing owl nest sites, human activity may cause owl nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success. Increased owl predation could also potentially occur in proximity to solar development, as a result of the typical increase in human-associated owl predators (Odell and Knight 2001). Mortality because of vehicle strikes may also increase on existing roads because of the increased traffic that would result from the solar development.

Loss of burrowing owl nesting or foraging habitat or nest disturbance would be a significant impact.

Impacts to Western Snowy Plover

Nesting habitat for western snowy plover occurs within the bed of Owens Lake, where this species has been documented nesting sporadically since the late 1800s. Impacts to western snowy plover could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to nesting or foraging habitat for this species. Potential impacts to western snowy plover could include nest disturbance, loss of nesting habitat, and loss of foraging habitat. Up to 1,500 acres of habitat for western snowy plover could be impacted if all of the maximum allowable developable acres within the Owens Lake SEDA were used for solar development. If solar development occurred in proximity to this species nest sites, human activity may cause nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success.

Loss of western snowy plover nesting or foraging habitat or nest disturbance would be a significant impact.

Impacts to Western Yellow-Billed Cuckoo

Nesting habitat for western yellow-billed cuckoo occurs within the OVSA in riparian habitat along the Owens River, Hogback Creek, Baker Creek, and Tinemaha Reservoir. Critical habitat for western yellow-billed cuckoo is located along the Owens River (Unit 5: CA-5 Owens River) in the OVSA. Impacts to western yellow-billed cuckoo and critical habitat could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to nesting or foraging habitat for this species. Potential impacts to western yellow-billed cuckoo could include nest disturbance and loss of nesting habitat. If solar development occurred in proximity to this species nest sites, human activity may cause nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success. Loss of riparian habitat could result in a loss of nesting habitat for this species.

Loss of western yellow-billed cuckoo nesting or foraging habitat or critical habitat or nest disturbance would be a significant impact.

<u>Impacts to Southwestern Willow Flycatcher</u>

Nesting habitat for southwestern willow flycatcher occurs within the Laws SEDA and the OVSA in riparian habitat. Impacts to southwestern willow flycatcher could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to nesting or foraging habitat for this species. Potential impacts to southwestern willow flycatcher could include nest disturbance and loss of nesting habitat. If solar development occurred in proximity to this species nest sites, human activity may cause nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success. Loss of riparian habitat could result in a loss of nesting habitat for this species.

Loss of southwestern willow flycatcher nesting or foraging habitat or nest disturbance would be a significant impact.

<u>Impacts to Bald Eagle and Golden Eagle</u>

Bald eagle has been reported nesting within the OVSA in the vicinity of Tinemaha Reservoir. Golden eagle has been reported nesting in the Rose Valley SEDA in the vicinity of the Haiwee Powerhouse. These species typically nest in tall trees away from human disturbances. Impacts to bald and golden eagle could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to nesting or foraging habitat for these species. Potential impacts to eagles could include nest disturbance and loss of nesting habitat.

If solar development occurred in proximity to eagle nest sites, human activity may cause nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success. If a suitable nest tree was removed, it could potentially result in the loss of nesting habitat.

Loss of bald or golden eagle nesting or foraging habitat or nest disturbance would be a significant impact.

<u>Impacts to Inyo California Towhee</u>

Inyo California towhee is not known to occur within any of the SEDAs or the OVSA. However, Inyo California towhee critical habitat is located in the Argus Mountains to the west of the Trona SEDA. If solar development occurred within or adjacent to nesting or foraging habitat for this species, construction activities and long term operations could result in nest disturbance and loss of nesting habitat.

Loss of Inyo California towhee nesting habitat or nest disturbance would be a significant impact.

Impacts to Bank Swallow

Bank swallow is known to occur in the OVSA along the Owens River and the North Fork Bishops Creek. If solar development occurred within or adjacent to nesting or foraging habitat for this species, construction activities and long term operations could result in nest disturbance and loss of nesting habitat. Bank swallows are typically tolerant of human activity near nesting colonies, if humans do not attempt to climb the nest banks (Garrison 1999). The major contributors to bank swallow habitat degradation are flood and erosion control projects that apply riprap or reduce the slope of river banks and canals, rendering them unusable for nesting and reducing their habitat quality for roosting and foraging (Garrison et al. 1987, Small 1994). Diversion of water may affect bank swallows if it results in the dewatering of canals or reduction of aquatic habitat for larval insects. Solar development is not expected to result in armoring of river banks or water diversion. However, aquatic communities may be greatly affected by surrounding land use. Stormwater runoff from developed areas can result in a decrease in abundance of aquatic invertebrates, which has been shown to impact insectivorous birds in both observational field studies and controlled field experiments (Baxter et al. 2004).

Loss of bank swallow nesting habitat, nest disturbance, or degradation of this species habitat would be a significant impact.

Impacts to Least Bell's Vireo

Potential nesting habitat for least Bell's vireo occurs within the Rose Valley SEDA and the OVSA in riparian habitat. Impacts to this species could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to nesting or foraging habitat for this species. Potential impacts to least Bell's vireo could include nest disturbance and loss of nesting habitat. If solar development occurred in proximity to this species nest sites, human activity may cause nest abandonment or interfere with the incubation and feeding of young in a way that reduces reproductive success. Loss of riparian habitat could result in a loss of nesting habitat for this species.

Loss of least Bell's vireo nesting or foraging habitat or nest disturbance would be a significant impact.

Impacts to Bighorn Sheep

Habitat for Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*) occurs in the Sierra Nevada west of the Owens Lake and Rose Valley SEDAs and in and adjacent to the OVSA. The CNDDB contains reported occurrences of this species in the OVSA in the vicinity of Mt. Langley and Mt. Williamson. Mojave bighorn sheep (*Ovis canadensis nelsoni*) also have the potential to occur within SEDAs in the Mojave desert region. Impacts to these species could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to suitable habitat. Direct effects to these species could include disturbance of individuals from construction and operations activities as well as noise, nighttime maintenance activities, and increased lighting. Once constructed, the solar facilities could also potentially pose a physical barrier to movement for this species.

Indirect impacts to these species could include habitat degradation due to introduction of invasive weeds, avoidance of areas near manmade structures, increased traffic on desert roads, and increased risk of wildfires.

Up to a maximum of 1,500 acres of suitable habitat for Sierra Nevada bighorn sheep could be impacted by the proposed project if all the total allowable developable area within the OVSA was developed within habitat or migration routes, and a maximum of 3,500 acres of suitable habitat for Mojave bighorn sheep could be impacted by the proposed project if all of the total allowable developable area within the SEDAs and OVSA was developed within habitat or migration routes for these species. This is likely a significant over-estimation of the potential impacts to these species as it is unlikely that all of the developable acreage within the SEDAs and/or OVSA would be within these species habitat, which is restricted to in open, rocky, steep areas and immediately adjacent areas with low growing vegetation for forage. Solar developments and related infrastructure in the valleys away from mountainous areas and migration routes would not be expected to impact bighorn sheep.

Disturbance of individuals and/or the loss or degradation of habitat for these species would be a significant impact.

Impacts to Sierra Nevada Red Fox

Habitat for Sierra Nevada red fox occurs in the Sierra Nevada in and adjacent to the OVSA. The CNDDB contains reported occurrences of this species in the vicinity of Bishop. Impacts to this species could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to suitable habitat. Direct effects to this species could include disturbance of individuals from construction and operations activities as well as noise, nighttime maintenance activities, and increased lighting. Once constructed, solar facilities could also potentially pose a barrier to movement for this species.

Indirect impacts to this species could include habitat degradation due to introduction of invasive weeds, avoidance by this species of areas near manmade structures, increased traffic on desert roads, and increased risk of wildfires.

Up to a maximum of 1,500 acres of suitable habitat for Sierra Nevada red fox could be impacted by the proposed project if all of the total allowable developable area within the OVSA was developed within habitat for this species. This is likely a significant over-estimation of the potential impacts to this species as it is highly unlikely that all of the developable acreage within the OVSA would be within this species habitat.

Disturbance of individuals or loss/degradation of habitat for this species would be a significant impact.

Impacts to Mohave Ground Squirrel

Habitat for Mohave ground squirrel occurs in the Owens Lake, Rose Valley, Pearsonville, and Trona SEDAs. Impacts to this species could occur as a result of implementation of the REGPA if solar development occurred within or adjacent to suitable habitat. Direct effects to this species could include disturbance of individuals from construction and operations activities. Once constructed, solar facilities could also potentially pose a barrier to movement for this species.

Indirect impacts to this species could include habitat degradation due to introduction of invasive weeds, avoidance by this species of areas near manmade structures, increased traffic on desert roads, and increased risk of wildfires.

Up to 1,500 acres of suitable habitat for Mohave ground squirrel could be impacted by the proposed project if all of the total allowable developable area within the Western Solar Energy Group was developed within habitat for this species, and an additional 600 acres could be impacted in the Trona SEDA if all of the total allowable developable area within that SEDA was developed within habitat for this species (see Table 3-1 for the total allowable maximum area for each Solar Energy Group). This is likely an over-estimation of the potential impacts to this species as it is unlikely that all of the developable acreage within the OVSA would be within this species habitat.

Disturbance of individuals or loss/degradation of habitat for this species would be a significant impact.

Impacts to American Badger and Kit Fox

American badger and desert kit fox could occur throughout much of the project area in suitable habitat. These species are subject to the general construction and operation impacts described above. Additional impacts could occur as a result of the eviction of these animals from project sites. Eviction of these animals involves passive mechanisms, designed to discourage individuals from remaining on site. During passive relocation, or hazing, dens of these species are typically blocked, fitted with one-way doors, with the eventual collapse and backfill of the dens. Displaced animals then must attempt to locate suitable new burrows in territory not already occupied by residents of the species. In some cases, evicted individuals may establish new burrows on site, or briefly move off site but emigrate back. Multiple relocation/eviction attempts may stress individuals and affect viability. Further, passive relocation of multiple individuals from a large site may lead to overcrowding of remaining suitable habitat and competition for food, mates, and territory in adjacent lands.

Disturbance of individuals or loss/degradation of habitat for these species resulting from construction, operations, or eviction would be a significant impact.

Impacts to Other Special Status Birds, Raptors, Migratory Birds and Bats

Special status birds and bats may occur in the SEDAs and the OVSA during project construction and operation and are subject to the general construction and operation impacts described above. Additional considerations specific to bats and birds are presented here.

Nesting and Roosting Sites

Construction and maintenance activities would exclude bird species less tolerant of anthropogenic disturbance. The introduction of structures (i.e., power towers, stacks of pallets, or construction materials) would provide potential roosting opportunities for bats and certain species of birds during construction and operation of the facility. Depending on the species, birds may actively nest on the ground near solar panels, vehicles, foundations, construction trailers, and other equipment left overnight or during a long weekend. Bats may roost in various structures. In areas with phased construction, or during long weekends or holidays with the facilities closed, birds or bats may quickly utilize potential nesting or roosting sites.

Impacts to roosting bats or nesting birds, or removal of nests during construction or operation would be considered a significant impact.

Collisions

Solar facilities may include relatively tall structures such as power towers (750 feet high), boilers, and air-cooled condenser units (120 feet high) that create a physical hazard to some wildlife. In particular, birds may collide with communication towers, transmission lines, and other elevated structures including buildings. Birds are at high risk for collision with power lines and guy wires that are difficult to see. Collision rates generally increase in low light conditions, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger. Bird collisions with power lines may occur for a variety of reasons, such as habitat, lighting, weather, bird species (body size, flight behavior, distribution and abundance, flocking behavior), and the power line configuration and location (Avian Power Line Interaction Committee [APLIC] 2012). Power lines located between feeding and roosting areas of flocking birds may present an increased collision risk, especially near rivers, lakes, or wetlands (APLIC 2014).

Lighting may result in increased collisions by attracting birds and bats to the area (lighting attracts insects), or disorienting them (birds). The lighting used may play an important role in preventing avian fatalities from night collisions with tall structures. Gehring et al. (2009) suggested that avian fatalities can be reduced, perhaps by 50 to 71 percent at guyed communication towers by removing steadily-burning red lights. Towers lit with strobe or flashing lights had less avian fatalities than non-flashing red lights (Gehring et al. 2009).

Since birds are prone to collisions with reflective surfaces, it could be expected that utility scale solar energy projects could cause bird mortality. Glare from the solar panels may confuse or disorient birds in flight, and cause it to collide with solar energy facilities or other objects. Glare may also attract birds confusing it as water, or attract insects, which attract insect eating birds, which attract predatory birds, increasing the likeliness of collisions. Similarly, solar thermal facilities use water ponds which attract birds (and insects), thereby increasing the likeliness of collision. Operation of solar panels in PV systems could cause an increase in polarized light pollution which occurs from light reflecting off of dark colored structures. Polarized light pollution can compete with water bodies for attracting insects and birds, thereby putting birds at greater risk for collision. Further, polarized light pollution can alter the ability of wildlife to seek out suitable habitat and elude or detect the presence of predators (Horvath et al. 2009). It has also been documented that for a variety of birds and other species polarized light pollution can affect their ability to detect natural polarized light patterns in the sky which can lead to the effect on their navigation ability and ultimately effects on dispersal and reproduction (Horvath et al. 2009).

At the 10-MW Solar One facility (a 10-MW pilot thermal energy facility located in the Mojave Desert in San Bernardino County that operated from 1982 to 1988), the results of a 40-week long study indicated that much of the bird mortality consisted predominantly of collisions with the mirrored heliostats; however some were killed by burns received while flying between two standby points. The USFWS Forensics Laboratory conducted a review of bird carcasses from three solar energy facilities, and analysis of the causes of avian mortality at various types of solar facilities in 2013 (Kagan et al. unpub.). It was determined that the size and continuity of the panels may contribute to the likeliness for collisions from birds mistaking the facility for water, or affected by polarized light. Solar systems with vertically oriented, continuously placed solar panels would provide a more continuous sky/water appearance (Kagan et al. unpub.). Although bird response to glare or polarized light pollution from solar panel technology is not well understood, it is likely that large scale facilities will see an increase in birds colliding with mirrors and perish. Solar facilities containing ponds that are accessible to birds may attract birds. Birds attracted to water features become habituated to the presence of accessible aquatic environment, which may also lead to misinterpretation of the glare from the nearby solar facility (Kagan et al. unpub.).

The severity of the impact to birds from collisions would vary depending on the species and numbers of birds involved. Studies are currently being conducted to find ways to minimize collisions with solar panels by reducing the attractiveness of solar panels to polarotatic insects and/or installing visual variables to break up the reflective surface and provide a visual cue that the panel is a solid structure (Kagan et al. unpub.). Death or injury to special status birds, raptors, and other migratory birds due to collisions would be considered a significant impact.

Luminosity

Solar thermal solar projects involve reflecting the sun's rays onto the solar boilers at the top of the solar towers, which may occupy over 100 feet of the top of each solar power tower. The boilers absorb approximately 95 percent of the light, and the 5 percent that is not absorbed is visible as reflected light. Heliostat arrays create zones with varying levels of irradiance. Areas of intense irradiance have the potential to cause injury or mortality to birds that enter those areas. No known mitigation for these effects exist, however, in previous projects in the County, the USFWS has requested that project owners monitor deaths to birds from the heat and irradiance caused as a result of reflecting and concentrating sunlight.

Injury or death of special status birds, raptors, and other migratory birds from exposure to irradiance would be in conflict with the MBTA and potentially the Bald and Golden Eagle Protection Act (if eagles are injured or killed) and would be a significant impact.

Solar Flux

The solar energy, or flux, generated between heliostats of solar thermal projects and the power tower has been known to result in bird mortality. This is a growing concern associated with solar thermal systems, as the impacts to birds from utility scale development are not clearly understood, and are significantly greater than anticipated. The Ivanpah Solar Electric Generating System operated by BrightSource LPT is the largest solar thermal power plant in the world. It is currently under scrutiny for the high avian mortality rates at the site resulting from solar flux, impact trauma, and predation trauma. High levels of solar energy or flux are generated by focusing reflected solar energy onto the power tower. Exposure to solar flux has the potential to harm birds by damaging or blinding the bird's eyes; burning or singeing of feathers and skin; and in some circumstances can result in the death of the bird. The potential for injury depends on a variety of factors including the length of exposure and the level of flux to which a bird is exposed. Generally, as the flux increases in intensity, the duration of exposure that is considered safe shortens.

Injury or death of special status birds, raptors, and other migratory birds resulting from solar flux would be in conflict with the MBTA and potentially the Bald and Golden Eagle Protection Act (if eagles are injured or killed) and would be a significant impact.

Electrocution

Transmission tower and pole design is a major factor in the electrocution risks to birds. Electrocution occurs when a perching bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a bird attempts to perch on a transmission tower/pole with insufficient clearance between these elements.

Electrocution can occur when horizontal separation is less than the distance of a bird's wingspan or where vertical separation is less than a bird's length from head-to-foot. Electrocution can also occur when birds perched side-by-side span the distance between these elements (APLIC 2006).

The majority of bird electrocutions are caused by lines that are energized at voltage levels between 1 and 60 kV, and "the likelihood of electrocutions occurring at voltages greater than 60 kV is low" because phase-to-phase and phase-to-ground clearances for lines greater than 60 kV are typically sufficient to prevent bird electrocution (APLIC 2006).

Impacts to special status birds, raptors, and other migratory birds resulting from electrocution would be considered to be a significant impact.

Impacts to Riparian Habitat, Special Status Natural Communities, or Protected Natural Areas

Special status natural communities are vegetation communities of limited distribution statewide or within a county or region and are often vulnerable to the environmental effects of projects. Special status natural communities mapped by the CNDDB within the SEDAs and the OVSA include active desert dunes, alkali meadow, alkali seep, mesquite bosque, transmontane alkali marsh, and water birch riparian scrub. Protected natural areas within the project area include the Fish Slough ACEC and the Fish Slough Ecological Reserve, Mohave ground squirrel Conservation Areas, and Wilderness Study Areas.

The Fish Slough ACEC is located in the OVSA; along Fish Slough near the northern County border (BLM 2000). This ACEC is associated with critical habitat for the federally listed as threatened Fish Slough milk-vetch. The Fish Slough Ecological Reserve is also located within the OVSA. This reserve is an approximately 190-acre reserve administered by CDFW and the BLM, near the Inyo County border with Mono County. Mohave ground squirrel Conservation Areas includes an area in the southwest section of the County from west of Pearsonville, north to and surrounding Haiwee, and east to, and surrounding Darwin, and an area in the south center of the County that surrounds Homewood Canyon and Valley Wells. The West Mojave Plan allows ground disturbance to be limited to 1 percent of existing habitat within the Conservation Area (BLM 2000). It applies to both public and privately held lands and all projects regardless of size within the Conservation Area. The Rose Valley SEDA falls entirely within the Conservation Area, and the Owens Lake SEDA contains a small area of Conservation Area along its south eastern boundary. In addition, several Wilderness Study Areas occur within the OVSA.

Special status natural communities and protected natural areas provide unique habitat for a variety of endemic plant and animal species. Perennial and ephemeral wetlands and water bodies are of particular concern because they provide unique aquatic habitat for many endemic species including special status plants, fish, birds, invertebrates, and amphibians. In addition, these aquatic habitats oftentimes qualify as wetlands or jurisdictional waters that are protected from disturbance by state and federal regulations.

Future development under the REGPA could result in the disturbance or loss of special status natural communities and protected natural areas. Special status natural communities and protected natural areas could be removed during site clearing and grading activities or otherwise altered due to factors such as changes to hydrology or introduction of invasive or other non-native species.

Loss or degradation of special status and protected natural communities would be considered to be a significant impact.

Impacts to Federally Protected Wetlands and Other Waters of the US as defined by Section 404 of the Clean Water Act

Construction and maintenance activities associated with future projects implemented under the REGPA could result in disturbance or loss of waters of the US, including creeks, rivers, streams, lakes, marshes, and other types of seasonal and perennial wetland communities. These wetlands or other waters of the US could be affected through direct removal, filling, hydrological interruption (including dewatering), alteration of bed and bank, and other construction-related activities, resulting in long-term degradation of a sensitive plant community, fragmentation, or isolation of an important wildlife habitat, and disruption of natural wildlife movement corridors.

Section 404 of the CWA requires any project that involves disturbance to a wetland or other water of the US to obtain a permit from the USACE authorizing the disturbance. Although subsequent improvements may disturb protected wetlands and/or other waters of the US, the regulatory process that is established through Section 404 of the CWA ensures that there is "no net loss" of wetlands or other waters of the US. If waters under jurisdiction of the USACE (waters of the US) cannot be avoided by a proposed project, then the USACE would require that an equal amount of waters of the US be provided as mitigation, by creation, preservation, and/or payment into a mitigation bank. Section 1602 of the Game and Fish Code requires that an agreement with CDFW be obtained for activities altering a stream or lakebed and its adjacent riparian or wetland vegetation.

Due to the program level analysis of this PEIR, development of detailed, site-specific information on this impact is not feasible. The implementing agency will be responsible for conducting appropriate project-level environmental review of federally protected wetlands and other waters of the US and will be responsible for implementing the appropriate mitigation measures for significant effects on the environment.

Future solar development projects have the potential to impact federally protected wetlands and other waters of the US and/or State, and adjacent riparian or wetland vegetation. These impacts are considered to be potentially significant.

Impacts to Movement or Migratory Corridors or Native Wildlife Nursery Sites

Native fish and wildlife species migrate or utilize movement corridors throughout the County. The Owens River and its tributaries through the Owens Valley provide habitat for the federally and state listed Owens pupfish (endangered, endangered) and Owens tui chub (endangered, endangered), as well as the CDFW species of concern, Owens sucker and Owens speckled dace. None of the SEDAs or the OVSA contain essential connectivity areas as delineated by the 2010 California Essential Habitat Connectivity Project, but the OVSA and Owens Lake SEDA contain linkages from the 2001 Missing Links in California's Landscape Project (Penrod et al. 2001), and Important Bird Areas identified by the California Audubon Society. These areas are closely associated with the Owens River and Owens Lake. The Charleston View and Sandy Valley SEDAs contain priority desert tortoise priority connectivity areas as identified by the USFWS.

Habitat fragmentation and isolation of natural areas from project impacts to movement or connectivity can result in population fragmentation, which can compromise population viability by a reduction in genetic diversity, and a greater risk of extirpation from disease, environmental factors such as drought or fire, and may ultimately reduce biodiversity. The distribution of quality suitable habitat is essential for biodiversity and species success. Wildlife corridors provide increased species richness and diversity, decreased probability of extinction, maintenance of genetic variation, a greater mix of habitat and successional stages, and alternative refugia from large disturbances. Particular habitat elements may be necessary to maintain populations of certain species, such as vegetation or terrain features suitable for desert tortoise or big horn sheep.

Impacts to wildlife movement or corridors may directly remove connectivity by impeding movement or removing suitable corridors. These impacts may include the placement of physical structures such as fencing, solar arrays, buildings, or other facilities that could block or impede movement. Certain species such as mule deer, bighorn sheep, coyotes, and desert tortoise could be excluded from areas with fencing installed. Ground-disturbing activities that could remove typical wildlife corridors such as washes or riparian corridors could interfere with wildlife movement patterns. Construction related activities including solar facility construction and installation and grading for new access roads could cause animals to temporarily avoid areas adjacent to the disturbed areas.

Indirect impacts to wildlife movement include the potential for increased human disturbance surrounding the facilities, increased vehicular access, shade, glare, vertical structures (i.e., heliostat arrays) affecting the openness of an area (a key element required by some species), colonization or expansion of invasive weeds through previously undisturbed areas could change the habitat composition making it unsuitable or impenetrable for certain species, and the potential for increased risk of predation by the addition of perching sites. Operational impacts to wildlife movement include increased predation as the result of night time lighting, and collision with vehicles.

Development of detailed, site-specific information of biological resources at the program level is not feasible. However, the implementing agency will conduct appropriate project-level environmental review and will be responsible for consideration of mitigation measures for significant effects on the environments. In determining potential impacts to wildlife movement, the project site should be evaluated for target species occurring in the project area and how the species may use the area for movement or dispersal, and how that use could be affected by development of the site. Each project will be designed to ensure that appropriate design measures, including avoidance where appropriate, are incorporated into the design of the project. Special consideration should be given to riparian corridors and waterways, areas identified as priority desert tortoise priority connectivity areas, wildlife linkages, and important bird areas.

Project activities that would interfere with the movement of resident or migratory species or impede fish or wildlife corridors, or nursery habitat would be considered to be a potentially significant impact.

Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds

The spread of invasive plant species or noxious weeds could occur as a result of implementation of the REGPA. Invasive species impacts to specific special status species and sensitive natural communities are discussed separately in those impact sections. The General Plan lists a policy for preventing the spread of noxious weeds in the County. Solar developments would result in heavy disturbance, and noxious weed seeds could spread through the tires or undercarriages of project-related vehicles and equipment, clothing of any ground personnel, and by wind and water erosion. The spread of invasive or noxious weeds would have the potential to cause an adverse affect on a variety of special status species and sensitive natural communities through alteration of a broad range of ecological interactions.

The spread of invasive plant species or noxious weeds would be a significant impact.

4.4.3.2 Impacts to Biological Resources for each Solar Energy Development Area and the Owens Valley Study Area

This section is a brief description of the potential impacts to biological resources for each SEDA and the OVSA.

Western Solar Energy Group

Laws Solar Energy Development Area

The total allowable developable area within the Laws SEDA is 120 acres. Development of solar projects within the Laws SEDA could potentially impact terrestrial habitats including alkali desert scrub and anthropogenically modified habitats such as croplands and urban habitats such as residential, commercial, and industrial facilities. Aquatic habitats potentially containing waters of the US/State including ephemeral drainages and man-made canals and ditches could also be impacted. No USFWS-designated critical habitat, special status natural communities or protected natural areas are mapped within the Laws SEDA. In addition, the SEDA does not contain any areas mapped as essential connectivity areas, missing links, or Important Bird Areas.

Table 4.4-3 identifies four special status species of fish, two amphibians, one reptile, four birds, five mammals, and five plants that are either known to occur or have the potential to occur within the Laws SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Laws SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those species with documented occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub and other upland habitats (cropland, anthropogenically modified habitats) within the valley floor of the Laws SEDA include desert tortoise, burrowing owl, Swainson’s hawk, Owens Valley vole, special status bats, and rare plants including coyote gilia, July gold, and Booth’s hairy evening-primrose. If development activities were to impact aquatic habitats in the Owens River drainage, special status fish species including Owens sucker, Owens pupfish, Owens speckled dace, and Owens tui chub could be impacted. If development activities were to occur along the west or east sides of the Laws SEDA near the foothills of the Inyo or White Mountains, additional semi-aquatic species such as Inyo Mountains slender salamander and northern leopard frog could be impacted along with species such as southwestern willow flycatcher and prairie falcon.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in the size of the local population, lowered reproductive success, or habitat fragmentation.

Owens Lake Solar Energy Development Area

The total allowable developable area within the Owens Lake SEDA is 1,500 acres. Development of solar projects within the Owens Lake SEDA could potentially impact terrestrial habitats including alkali desert scrub, desert scrub, and barren habitats. Aquatic habitats potentially containing waters of the US/State including seeps and springs within the lakebed, desert riparian, freshwater emergent wetland, and lacustrine could also be impacted. No USFWS-designated critical habitat, special status natural communities or protected natural areas are mapped within the Owens Lake SEDA. However, the Owens River and the entire Owens Lake lakebed are designated as Important Bird Areas, largely due to its importance to waterfowl, shorebirds, and wading birds that use it as a stopover in spring and fall as they migrate (Audubon California 2014). The Cartago Wildlife Area, which is a State Wildlife Management Area, partially falls within the Owens Lake SEDA and the Owens Lake SEDA contains a small area of Management Area along its southeastern boundary. The Owens Lake SEDA also contains a missing link corridor that extends from the lakebed, northward along the Owens River. In addition, the Owens Lake Habitat Management Plan is being implemented primarily to protect habitat for snowy plover and other shorebirds using Owens Lake (see Section 4.4.2.3).

Table 4.4-4 identifies two special status species of fish, one invertebrate, one amphibian, three reptiles, seven birds, four mammals, and three plants that are either known to occur or have the potential to occur within or adjacent to the Owens Lake SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Owens Lake SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub, desert scrub, and barren habitats of the Owens Valley SEDA include desert tortoise, northern sagebrush lizard, Mojave fringe-toed lizard, burrowing owl, Le Conte's thrasher, Owens Valley vole, Mohave ground squirrel, special status bats, and rare plants including bald daisy, Parish's popcornflower, and Owens Valley checkerbloom. If development activities were to impact aquatic habitats, special status fish species including Owens pupfish and Owens tui chub could be impacted as well as Wong's springsnail. If development activities were to occur along the west or east sides of the Owens Lake SEDA near the foothills of the Inyo or White Mountains, in the Owens lake bed, or in riparian habitats, additional aquatic habitat related species such as Inyo Mountains slender salamander, western snowy plover, mountain plover, northern harrier, yellow-breasted chat, and least bittern could be impacted.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Rose Valley Solar Energy Development Area

The total allowable developable area within the Rose Valley SEDA is 600 acres. Development of solar projects within the Rose Valley SEDA could potentially impact terrestrial habitats including alkali desert scrub, desert scrub, barren, and pinyon juniper. Aquatic habitats potentially containing waters of the US/State, including ephemeral waterways and Haiwee Reservoir could also be impacted. No USFWS-designated critical habitat is mapped within the Rose Valley SEDA. However, active desert dune, a special status natural community as well as the Mohave ground squirrel Conservation Area is present within this SEDA. In addition, the Los Angeles Aqueduct through the Rose Valley SEDA and the North Haiwee Reservoir are designated Important Bird Areas.

Table 4.4-5 identifies two special status species of reptiles, eight birds, two mammals, and four rare plants that are either known to occur or have the potential to occur within or adjacent to the Rose Valley SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Rose Valley SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub, desert scrub, barren, and pinyon juniper of the Rose Valley SEDA include desert tortoise, northern sagebrush lizard, golden eagle, burrowing owl, Swainson's hawk, white-tailed kite, loggerhead shrike, Owens Valley vole, Mohave ground squirrel, and rare plants including sanicle cymopterus, Booth's evening-primrose, creamy blazing star, and Owens Valley checkerbloom. If development activities were to occur adjacent to or in riparian habitats, additional species such as northern harrier, yellow-breasted chat, and least Bell's vireo could be impacted.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

<u>Pearsonville Solar Energy Development Area</u>

The total allowable developable area within the Pearsonville SEDA is 600 acres. Development of solar projects within the Pearsonville SEDA could potentially impact terrestrial habitats including alkali desert scrub and desert scrub. Aquatic habitats potentially containing waters of the US/State, including freshwater ponds and freshwater forested/shrub wetland could also be impacted. No USFWS-designated critical habitat is mapped within the Pearsonville SEDA. The SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas; however, two missing links corridors are identified directly north of the SEDA, at a constriction between the Sierra Nevada foothills and the Coso Range. The southern Sierra Nevada range directly west of the SEDA is identified as an Important Bird Area.

Table 4.4-6 identifies desert tortoise and Mohave ground squirrel as either being known to occur or having the potential to occur within or adjacent to the Pearsonville SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Pearsonville SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub and desert scrub of the Pearsonville SEDA include desert tortoise and Mohave ground squirrel. No special status species were identified as having the potential to occur within aquatic habitats in the SEDA. Although no special status plant species were identified as having the potential to occur in the Pearsonville SEDA, botanical inventories would need to be conducted to support this determination.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

<u>Owens Valley Study Area</u>

The total allowable developable area within the OVSA is 1,500 acres. Development of solar projects within the OVSA could potentially impact terrestrial habitats including alkali desert scrub, desert scrub, sagebrush, pinyon juniper, montane riparian, and low sage. Aquatic habitats including wetlands and the Owens River and its tributaries occur throughout the OVSA. Fish Slough at the northern boundary of the OVSA contains critical habitat for Fish Slough milk-vetch. Critical habitat for Sierra Nevada bighorn sheep occurs just west of the OVSA, in the Sierra Nevada and eastern foothills. The Owens River and the entire Owens Lake lakebed are designated as Important Bird Areas, largely due to its importance to waterfowl, shorebirds, and wading birds that use it as a stopover in spring and fall as they migrate (Audubon California 2014). The Important Bird Area extends along the river for its entire length through the County. In addition, the segment of the Los Angeles Aqueduct where it generally follows the Owens River is designated as an Important Bird Area. A missing link corridor extends across the valley, connecting the Sierra Nevada to the Inyo Mountains at the valley's narrowest point. Another missing link corridor extends from that point southward along the Owens River, to Owens Lake. In addition, several Wilderness Study Areas occur within the OVSA.

Tables 4.4-7 and 8 identify numerous special status plant and animal species that are either known to occur or have the potential to occur within or adjacent to the OVSA and be impacted by development activities. Special status species may be directly or indirectly affected by future solar projects in the OVSA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Special status species identified as having the potential to be impacted by development are too numerous to list here but are included in Tables 4.4-7 and 4.4-8.

Southern Solar Energy Group

Trona Solar Energy Development Area

The total allowable developable area within the Trona SEDA is 600 acres. Development of solar projects within the Trona SEDA could potentially impact terrestrial habitats including alkali desert scrub and desert scrub. Aquatic habitats potentially containing waters of the US/State including freshwater ponds and freshwater wetland could also be impacted. There is no USFWS-designated critical habitat in the Trona SEDA; however, Inyo California towhee critical habitat is located in the Argus Mountains to the west of the SEDA although this species has been proposed for delisting and the USFWS has found that delisting this species is warranted. The SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas.

Table 4.4-9 identifies desert tortoise, prairie falcon, and Mohave ground squirrel as either being known to occur or having the potential to occur within or adjacent to the Trona SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Trona SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those mapped by the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub and desert scrub of the Trona SEDA include desert tortoise and Mohave ground squirrel. No special status species were identified as having the potential to occur within aquatic habitats in the SEDA. Although no special status plant species were identified as having the potential to occur in the Trona SEDA, botanical inventories would need to be conducted to support this determination.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The total allowable developable area within the Chicago Valley SEDA is 300 acres. Development of solar projects within the Chicago Valley SEDA could potentially impact common terrestrial habitats including alkali desert scrub and desert scrub. In addition, development within the SEDA could impact mesquite bosque, a special status natural community, which is mapped throughout the SEDA (CNDDB 2014). Aquatic habitats potentially containing waters of the US/State, including freshwater ponds, freshwater wetlands, and ephemeral washes could also be impacted. There is no USFWS-designated critical habitat in the Chicago Valley SEDA and the SEDA does not contain essential connectivity areas, missing links, or Important Bird Areas.

Table 4.4-10 identifies desert tortoise and four rare plant species as either being known to occur or having the potential to occur within or adjacent to the Chicago Valley SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Chicago Valley SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within alkali desert scrub and desert scrub of the Chicago Valley SEDA include desert tortoise, Pahrump orache, forked buckwheat, Ash Meadows buckwheat, and Parish's phacelia. Mesquite bosque would be impacted if development occurred within the eastern portion of the SEDA. No special status species were identified as having the potential to occur within aquatic habitats in the SEDA.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

<u>Charleston View Solar Energy Development Area</u>

The total allowable developable area within the Charleston View SEDA is 2,400 acres. Development of solar projects within the Charleston View SEDA would be expected to impact desert scrub, the only terrestrial community mapped in the SEDA. Aquatic habitats potentially containing waters of the US/State, including a dry lakebed and ephemeral washes could also be impacted. There is no USFWS-designated critical habitat in the Charleston View SEDA. However, the SEDA contains desert tortoise priority connectivity areas as mapped by USFWS (Figure 4.4-4). These areas are in the northern half of the SEDA, and are considered essential to the species recovery. The SEDA does not contain other essential connectivity areas, missing links, or Important Bird Areas.

Table 4.4-11 identifies desert tortoise, prairie falcon, and 17 rare plant species as either being known to occur or having the potential to occur within or adjacent to the Charleston View SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Charleston View SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within desert scrub habitat of the Charleston View SEDA include desert tortoise and the following special status plant species: desert wing-fruit, Nevada onion, small-flowered androstephium, Nye milk-vetch, Preuss' milk-vetch, gravel milk-vetch, Tidestrom's milk-vetch, Wheeler's dune-broom, purple-nerve cymopterus, Torrey's Mormon-tea, forked buckwheat, Ash Meadows buckwheat, wing-seed blazing star, Torrey's blazing star, spine-noded milk-vetch, Goodding's phacelia, and Johnson's bee-hive cactus. Reported occurrences of rare plants are numerous in the Charleston View SEDA and are concentrated in the central portion of the SEDA.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

<u>Sandy Valley Solar Energy Development Area</u>

The total allowable developable area within the Sandy Valley SEDA is 600 acres. Development of solar projects within the Sandy Valley SEDA would have the potential to impact desert scrub and cropland, the only terrestrial communities mapped in the SEDA. There are no aquatic habitats mapped in the SEDA, however, potential waters of the US/State could be present. There is no USFWS-designated critical habitat in the Chicago Valley SEDA. However, the SEDA contains desert tortoise priority connectivity areas as mapped by USFWS (Figure 4.4-4). These areas are isolated polygons in the northern half of the SEDA, and are considered essential to the species recovery. The SEDA does not contain other essential connectivity areas, missing links, or Important Bird Areas.

Table 4.4-12 identifies desert tortoise and three rare plant species as either being known to occur or having the potential to occur within or adjacent to the Sandy Valley SEDA and be impacted by development activities within the SEDA. Special status species may be directly or indirectly affected by future solar projects in the Sandy Valley SEDA if the development would encroach on that species habitat or movement corridors. Impacts to special status species would not be expected to be limited to those with reported occurrences in the CNDDB. The CNDDB relies on reported sightings of special status species, and is not a complete inventory of special status species habitat.

Special status species identified as having the potential to be impacted by development within desert scrub habitat of the Sandy Valley SEDA include desert tortoise, Preuss' milk-vetch, forked buckwheat, and Goodding's phacelia. No special status species were identified as occurring within cropland habitat. Reported occurrences of rare plants are numerous in the Sandy Valley SEDA and are concentrated in the eastern half of the SEDA.

Project-specific impacts to special status species would depend on the location of the project, the suitability of the habitats present, construction timing, and the species likely to occur. Impacts on rare plants and special status wildlife species could result in a substantial reduction in the size of the local population, lowered reproductive success, or habitat fragmentation.

4.4.3.3 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The County strives to conserve biological resources within its boundaries. The General Plan contains a goal (BIO-1) and associated polices related to maintaining and enhancing the biological diversity and healthy ecosystems in the County. As described in Section 3 of this PEIR, the locations of the SEDAs were chosen specifically to minimize potential impacts to biological resources. Constraining solar developments in the County and guiding those developments to previously disturbed areas within each SEDA and the OVSA as proposed under the REGPA would be consistent with BIO-1. Implementation of the REGPA would be consistent with the policies of the General Plan protecting biological resources.

4.4.3.4 Conflict with Habitat Conservation Plans.

Although the SEDAs and OVSA are within the boundaries of proposed HCPs, two of the HCPs (DRECP and West Mojave Plan) are not currently approved nor being implemented. The third HCP (OVLMP) applies to actions on LADWP lands.

The County has limited jurisdiction over the approval and environmental impact analysis required for projects sited on BLM and LADWP lands; however, the County strives to coordinate with public agencies to harmonize the land use plans of the County with the public agencies plans. General Plan contains goals and policies (GOV-1) to work with the agencies to promote consistency with the County's General Plan. Pursuant to existing policies of the General Plan, future development on BLM or LADWP lands under the REGPA would be required to be consistent with that HCP. If the County becomes a signatory of the DRECP, future projects within the boundaries of the HCP would be required to comply with the requirements of the HCP. Implementation of the REGPA would be consistent with the regionally occurring HCPs.

4.4.4 Level of Significance before Mitigation

Based on the analysis in Section 4.4.3, future utility scale, distributed generation, and community scale solar energy projects under the REGPA could result in potentially significant impacts related to: (1) special status wildlife and rare plants; (2) groundwater dependent vegetation; (3) riparian habitat and special status natural communities; (4) waters of the US and/or State; (5) wildlife movement or migratory corridors; (6) the introduction or spread of invasive species; and (7) compatibility with HCPs. Impacts to birds resulting from solar flux and luminosity from utility scale solar thermal projects, and collisions with solar facility structures would be unmitigable and would remain significant and unavoidable. Mitigation measures are required for all potentially significant and significant and unavoidable impacts to minimize these impacts to the maximum extent feasible. The REGPA would be consistent with the policies of the General Plan protecting biological resources, and regionally occurring HCPs, and impacts would be less than significant.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to biological resources when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA.

4.4.5 Mitigation Measures

Biological resources mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to biological resources. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on biological resources and would not require a biological resource evaluation or implementation of the biological resources mitigation measures listed in this section. In such cases, the County shall document that no impacts to biological resources would occur and no mitigation measures are necessary in lieu of the biological resources evaluations required in Mitigation Measures BIO-1 through BIO-3.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact biological resources, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo county review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.4.3 and 4.4.4, implementation of solar energy projects under the REGPA would result in potentially significant impacts related to biological resources Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to biological resources, and may reduce them to below a level of significance in most cases. Even with implementation of the measures listed in this section, some impacts will remain significant and unavoidable.

MM BIO-1: Prepare project level biological resources evaluation and mitigation and monitoring plan.

Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact biological resources as determined by a qualified biologist, a project level biological resource evaluation shall be prepared by a qualified biologist for the project. The biological resource evaluation shall include field reconnaissance and focused surveys as determined necessary by a qualified biologist to identify special status species and natural communities present or having the potential to occur on the site, an evaluation of the extent of those habitats, an evaluation of the potential for impacts to each special status species and/or habitat, and shall prescribe specific mitigation measures to avoid or reduce impacts to biological resources. The level of analysis will be based on factors such as the size of the proposed project and extent of impacts to biological resources.

For projects with the potential to impact special status species or habitats, a project-specific biological resources mitigation and monitoring plan shall be prepared in cooperation with and that meets the approval of permitting agencies. The plan shall be implemented during all phases of the project and shall identify appropriate mitigation levels to compensate for significant direct, indirect, and cumulative impacts, including habitat, special status plant, and wildlife species losses as well as impacts to groundwater dependent vegetation. The plan shall address at a minimum:

- Biological resource avoidance and minimization measures and mitigation, monitoring and compliance measures required by federal, state, and local applicable permitting agencies.
- Documentation (based on surveys) of sensitive plant and wildlife expected to be affected by all phases of the project (project construction, operation, abandonment, and decommissioning). Agencies may request additional surveying, based on the documentation or past experience working with the resources. Include measures to avoid or minimize impacts to species and habitat.
- A detailed description of measures to minimize or mitigate permanent and temporary disturbances from construction activities.
- All locations on a map, at an approved scale, of sensitive plant and wildlife areas subject to disturbance and areas requiring temporary protection and avoidance during construction.
- Aerial photographs or images, at an approved scale, of areas to be disturbed during project construction activities.
- Duration for each type of monitoring and a description of monitoring methodologies and frequency.
- Performance standards and criteria to be used to determine if/when proposed mitigation is or is not successful.
- All standards and remedial measures to be implemented if performance standards and criteria are not met.
- A closure/decommissioning or abandonment plan, including a description of funding mechanism(s).
- A process for proposing plan modifications to the County project manager.

MM BIO-2: Minimize impacts to special status plants.

Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact special status plant species as determined by a qualified biologist/botanist, a qualified botanist shall determine the presence or absence of special status plants within the project site. The following steps shall be implemented to document special-status plants, as determined necessary by the botanist:

- Review Existing Information. The botanist shall review existing information to develop a list of special status plants that could grow in the specific project area. Sources of information consulted shall include CDFW's CNDDB, the CNPS electronic inventory, and previously prepared environmental documents. If the project is taking place on BLM or state administered lands (e.g., BLM, State Trust Lands), the list of sensitive plants from that land managing agency shall be obtained and reviewed in addition to the lists previously mentioned.

- Coordinate with Agencies. The botanist shall coordinate with the appropriate agencies (i.e., CDFW and USFWS) to discuss botanical resource issues and determine the appropriate level of surveys necessary to document special status plants.

- Conduct Field Studies. The botanist shall evaluate existing habitat conditions for each project and determine what level of botanical surveys may be required. The type of botanical survey shall depend on species richness, habitat type and quality, and the probability of special status species occurring in a particular habitat type. Depending on these factors and the proposed construction activity, one or a combination of the following levels of survey may be required:

- Habitat Assessment. A habitat assessment shall be conducted to determine whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys shall be required.

- Species-Focused Surveys. Species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special status plants. The surveys shall focus on special status plants that could grow in the region, and would be conducted during a period when the target species are evident and identifiable.

- Floristic Protocol-Level Surveys. Floristic surveys that follow the CNPS Botanical Survey Guidelines shall be conducted in areas that are relatively undisturbed and/or have a moderate to high potential to support special status plants. The CNPS Botanical Survey Guidelines require that all species be identified to the level necessary to determine whether they qualify as special status plants, or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special status plants that could occur in the area are evident and identifiable. To account for different special status plant identification periods, one or more series of field surveys may be required in spring and summer months.

- Map Special Status Plants. Special status plant populations identified during the field surveys shall be mapped and documented as part of the CEQA process, as applicable. Project development plans shall consider avoidance to the extent practicable. If avoidance is not practicable while otherwise obtaining the projects objectives, then other suitable measures and mitigation shall be implemented in coordination with the appropriate regulatory agency (i.e., USFWS, CDFW, BLM).

If special status plants are identified in the project area, the following measures shall be implemented to avoid and minimize impacts on special status plants:

- The project shall be redesigned or modified to avoid direct and indirect impacts on special status plants to the maximum extent~~,~~ if feasible.

- For projects that are determined to have the potential to result in "take" of state or federally-listed plant species, consultation shall be conducted with CDFW or USFWS respectively prior to project commencement.

- Special status plants near the project site shall be protected by installing environmentally sensitive area fencing (orange construction barrier fencing) around special status plant populations. The environmentally sensitive area fencing shall be installed at least 20 feet from the edge of the population. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- If avoidance of special status plants is not feasible, mitigation shall be developed in coordination with USFWS and/or CDFW to reduce impacts on the local population of the special status species. No project shall destroy the entire known population of a special status plant species within any SEDA or the OVSA. If individuals of a special status species occur within an area proposed for construction and take cannot be avoided, the plants shall be transplanted under the direction of a qualified botanist if transplantation of such species is deemed likely to succeed or seed shall be collected prior to destruction of the plants and dispersed in suitable habitats not impacted by construction, if such habitats exist and seed collection is deemed likely to be successful by a qualified botanist with experience propagating the species in question. In all cases, CDFW will be notified at least 10 days prior to removal of any special status plant to allow transplantation or collection of seed at their discretion.

- If transplanting is proposed, the botanist shall coordinate with the appropriate resource agencies and local experts to determine whether transplantation is feasible. If the agencies concur that transplantation is a feasible mitigation measure, the botanist shall develop and implement a transplantation plan through coordination with the appropriate agencies. The special status plant transplantation plan shall involve identifying a suitable transplant site; moving the plant material and seed bank to the transplant site; collecting seed material and propagating it in a nursery; and monitoring the transplant sites to document recruitment and survival rates.

MM BIO-3: Minimize impacts to special status wildlife.

Prior to the approval of any solar development projects or related infrastructure under the REGPA with the potential to impact special status wildlife as determined by a qualified biologist, a qualified wildlife biologist shall document the presence or absence of suitable habitat for special status wildlife in the project site. The following steps shall be implemented to document special status wildlife and their habitats for each project, as determined by the biologist:

- Review Existing Information. The wildlife biologist shall review existing information to develop a list of special status wildlife species that could occur in the project area. The following information shall be reviewed as part of this process: the USFWS special status species list for the project region, CDFW's CNDDB, previously prepared environmental documents, and USFWS issued biological opinions for previous projects. If the project is taking place on BLM or state administered lands (e.g., BLM, State Trust Lands), the list of special status wildlife from that land managing agency shall be obtained and reviewed in addition to the lists previously mentioned.

- Coordinate with State and Federal Agencies. The wildlife biologist shall coordinate with the appropriate agencies (CDFW, USFWS, BLM) to discuss wildlife resource issues in the project region and determine the appropriate level of surveys necessary to document special status wildlife and their habitats.

- Conduct Field Studies. The wildlife biologist shall evaluate existing habitat conditions and determine what level of biological surveys may be required. The type of survey required shall depend on species richness, habitat type and quality, and the probability of special status species occurring in a particular habitat type. Depending on the existing conditions in the project area and the proposed construction activity, one or a combination of the following levels of survey may be required:

- Habitat Assessment. A habitat assessment determines whether suitable habitat is present. The wildlife biologist shall conduct project-specific habitat assessments consistent with protocols and guidelines issued by responsible agencies for certain special status species. USFWS and CDFW have issued protocols for evaluating bald eagle habitat (2004 Protocol for Evaluating Bald Eagle Habitat and Populations in California). Habitat assessments are used to assess and characterize habitat conditions and to determine whether return surveys are necessary. If no suitable habitat is present for a given special status species, no additional species-focused or protocol surveys shall be required.

- Species-Focused Surveys. Project-specific species-focused surveys (or target species surveys) shall be conducted if suitable habitat is present for special status wildlife and if it is necessary to determine the presence or absence of the species in the project area. The wildlife biologist shall conduct project-specific surveys focusing on special status wildlife species that have the potential to occur in the region. The surveys shall be conducted during a period when the target species are present and/or active.

- Protocol-Level Wildlife Surveys. The wildlife biologist shall conduct project specific protocol level surveys for special status species with the potential to be impacted by the proposed project. The surveys shall comply with the appropriate protocols and guidelines issued by responsible agencies for the special status species. USFWS and CDFW have issued survey protocols and guidelines for several special- status wildlife species that could occur in the project region, including (but not limited to): bald eagle, burrowing owl, golden eagle, Swainson's hawk, least Bell's vireo, willow flycatcher, desert tortoise, and San Joaquin kit fox. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS- or CDFW-approved biologist perform the surveys. The project proponent shall coordinate with the appropriate state or federal agency biologist before the initiation of protocol-level surveys to ensure that the survey results would be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species.

- Habitat Mapping. The wildlife biologist shall map special status wildlife or suitable habitat identified during the project-specific field surveys.

In addition, the following measures should be implemented to avoid and minimize impacts on special status species and their habitats if they occur within a site:

- For projects that are determined to have the potential to result in "take" of state or federally-listed animal species, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement.

- Any special status wildlife and/or their habitats identified within a project site outside of the work area will be protected by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking shall be installed at a minimum distance from the edge of the resource as determined through coordination with state and federal agency biologists (USFWS and CDFW, BLM). The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- If ground disturbing activities are required prior to site mobilization, such as for geotechnical borings or hazardous waste evaluations, a qualified biologist shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.

- In areas that could support desert tortoise or any other sensitive wildlife species, a County-approved biologist with the appropriate CDFW and/or USFWS approvals for the species being salvaged and relocated shall walk immediately ahead of equipment during the clearing and grading activities to salvage and relocate the wildlife in the path of the operations. The species shall be salvaged and relocated to off-site habitat when conditions will not jeopardize the health and safety of the biologist.

- Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. Vehicles shall not exceed 25 mph on the project site. Vehicles shall abide by posted speed limits on paved roads.

- For projects with the potential to affect desert tortoise, parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it shall be left to move on its own. If it does not move within 15 minutes, a CDFW and USFWS approved desert tortoise biologist may remove and relocate the animal to a safe location if temperatures are within the range described in the Desert Tortoise Field Manual (USFWS 2013 or most recent version, available from the Ventura Fish and Wildlife Office website http://www.fws.gov/ventura/endangered/species/surveys-protocol.html). All access roads outside of the fenced project footprint shall be delineated with temporary desert tortoise exclusion fencing on either side of the access road, unless otherwise authorized by the County project manager and County biologist.

- A qualified biologist shall be designated to oversee compliance with biological resources avoidance and minimization measures during mobilization, ground disturbance, grading, construction, operation, and closure/decommissioning, or project abandonment, particularly in areas containing or known to have contained sensitive biological resources, such as special status species and unique plant assemblages. The qualified biologist shall perform biological monitoring during all grading, clearing, grubbing, trenching, and construction activities. 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 biological monitor. Spoils shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special status species. Parking areas, staging and disposal site locations shall also be located in areas without native vegetation or special status species habitat. All disturbances, vehicles, and equipment shall be confined to the flagged areas. The qualified biologist shall be responsible for actions including, but not limited to, the following:

  - Clearly marking sensitive biological resource areas and inspecting the areas at appropriate intervals for meeting regulatory terms and conditions.
  - Inspecting, daily, active construction areas where wildlife may have become trapped (for example, trenches, bores, and other excavation sites that constitute wildlife pitfalls outside the permanently fenced area) before beginning construction. At the end of the day, conducting wildlife inspections of installed structures that would entrap or not allow escape during periods of construction inactivity. Periodically

inspecting areas with high vehicle activity (such as parking lots) for wildlife in harm's way.

  - Overseeing special status plant salvage operations.
  - Immediately recording and reporting hazardous spills immediately as directed in the project hazardous materials management plan.
  - Coordinating directly and regularly with permitting agency representatives regarding biological resources issues, and implementation of the biological resource avoidance and minimization measures.
  - Maintaining written records regarding implementation of the biological resource avoidance and minimization measures, and providing a summary of these records periodically in a report to the appropriate agencies.
  - Notifying the project owner and appropriate agencies of non-compliance with biological resource avoidance and minimization measures.
  - At the end of each work day, the biological monitor shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled or if backfilling is not feasible, the biological monitor shall ensure that all trenches, bores, and other excavations are sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically, but no less than three times, throughout the day and at the end of each workday by the qualified biologist. Should a tortoise or other wildlife become trapped, the CDFW and USFWS-approved desert tortoise biologist shall remove and relocate the individual as described in the project's Desert Tortoise Relocation/Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.
  - Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground, and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected by the biological monitor for desert tortoises or other special status species such as fringe-toed lizard, before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.

- Access roads, pulling sites, storage and parking areas outside of the fenced solar facility area shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the APLIC Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Mitigating Bird Collisions with Power Lines (APLIC 2004) to reduce the likelihood of bird electrocutions and collisions.

- Facility lighting shall be designed, installed, and maintained to direct light downwards towards the project site and avoid light spillover to wildlife habitat.

- Construction and operation related noise levels shall be minimized to minimize impacts to wildlife.

- All vertical pipes greater than 4 inches in diameter shall be capped to prevent the entrapment of birds and other wildlife.

- All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The biological monitor shall be informed of any hazardous spills immediately. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

- Road surfacing and sealants as well as soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, state, and local laws and according to the guidelines for wildlife- safe use of herbicides in BIO-24 (Weed Management Plan).

- The following measures shall be implemented to minimize attractants to wildlife:

  - If the application of water is needed to abate dust in construction areas and on dirt roads, use the least amount needed to meet safety and air quality standards and prevent the formation of puddles, which could attract wildlife to construction sites. The biological monitor shall patrol these areas to ensure water does not puddle and attract desert tortoise, common ravens, and other wildlife to the site and shall take appropriate action to reduce water application where necessary.
  - Water shall be prohibited from collecting or pooling for more than 24 hours after a storm event within the project retention basin. Standing water within the retention basin shall be removed, pumped, raked, or covered. Alternative methods or the timeframe for allowing the water to pool may be modified with the approval of the biological monitor.
  - Dispose trash and food-related items in self-closing, sealable containers with lids that latch to prevent wind and wildlife from opening containers. Empty trash containers daily and remove from the project site those associated with construction when construction is complete.
  - To avoid attracting insectivorous birds and bats, prepare a facility vector (such as mosquitoes or rodents) control plan, as appropriate, that meets the permitting agency approval and would be implemented during all phases of the project.

- Workers or visitors, while on project property, shall be prohibited from feeding wildlife, bringing domestic pets to the project site, collecting native plants, or harassing wildlife.

- To reduce the potential for the transmission of fugitive dust the project proponent shall implement dust control measures. These shall include:

    - The project proponent shall apply non-toxic soil binders, equivalent or better in efficiencies than the CARB- approved soil binders, to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions.
    - Water the disturbed areas of the active construction sites at least three times per day and more often if uncontrolled fugitive dust is noted. Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer's specifications to exposed piles with a 5 percent or greater silt content. Agents with known toxicity to wildlife shall not be used unless approved by the County biologist and County project manager.
    - Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures above) or otherwise create stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased.
    - Increase the frequency of watering, if water is used as a soil binder for disturbed surfaces, or implement other additional fugitive dust mitigation measures, to all active disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 mph.

- A project-specific worker environmental awareness program (WEAP) shall be developed and carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning, or project abandonment, and restoration/reclamation activities). The WEAP shall include the biological resources present and the measures for minimizing impacts to those resources. Interpretation for non-English speaking workers shall be provided, and all new workers shall be instructed in the WEAP. The project field construction office files will contain the names of onsite personnel (for example, surveyors, construction engineers, employees, contractors, contractor's employees/ subcontractors) who have participated in the education program. All employees and contractors shall be trained to carry out the WEAP and on their role in ensuring the effectiveness of implementing the Plan. At a minimum, the WEAP shall including the following:

    - Photos and habitat descriptions for special status species that may occur on the project site and information on their distribution, general behavior, and ecology.
    - Species sensitivity to human activities.
    - Legal protections afforded the species.
    - Project measures for protecting species.
    - State and federal law violation penalties.

  - Worker responsibilities for trash disposal and safe/ humane treatment of special status species found on the project site, associated reporting requirements, and specific required measures to prevent taking of threatened or endangered species.
  - Handout materials summarizing the contractual obligations and protective requirements specified in project permits and approvals.
  - Project site speed limit requirements and penalties.

- A project specific restoration, re-vegetation, and reclamation plan that meets the approval of permitting agencies shall be prepared and carried out for all projects. The plan shall address at a minimum:
  - Minimizing natural vegetation removal and the consideration of cutting or mowing vegetation rather than total removal, whenever possible.
  - Salvage and relocation of cactus and yucca from the site before beginning construction.
  - Identification of protocols to be used for vegetation salvage.
  - Reclaiming areas of temporarily disturbed soil using certified weed free native vegetation and topsoil salvaged from excavations and construction activities.
  - Restoration and reclamation of temporarily disturbed areas, including pipelines, transmission lines, staging areas, and temporary construction-related roads as soon as possible after completion of construction activities. The actions are recommended to reduce the amount of habitat converted at any one time and promote recovery to natural habitats.
  - Specifying proper seasons and timing of restoration and reclamation activities to ensure success.

MM BIO-4: Minimize impacts to special status fish.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status fish, consultation with USFWS shall be conducted for projects with the potential to impact federally listed species including Owens pupfish or Owens tui chub and coordination with CDFW will be conducted for projects with the potential to impact state listed species or CDFW species of special concern including Owens sucker and Owens speckled dace. For projects that are determined to have the potential to result in "take" of state or federally listed fish species, consultation shall be conducted with CDFW or USFWS respectively and take authorization obtained prior to project commencement.

MM BIO-5: Minimize impacts to amphibians.

The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status amphibians.

- Surveys for special status amphibians including but not limited to northern leopard frog, Owens Valley web-toed salamander, and Inyo Mountains slender salamander shall be conducted by a qualified biologist with experience surveying for and/or handling these species. If construction is scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted within two weeks prior to the commencement of construction. If construction is not scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted during the optimal period of identification for these species (in the calendar year prior to construction) and again within two weeks prior to the commencement of construction.

- If any of these species are found on a project site during the surveys, CDFW shall be contacted and avoidance and mitigation measures appropriate to the species will be developed. Avoidance measures could include actions such as waiting to begin construction until the animal passively disperses from the project site, active relocation of the animal, or allowing construction to begin with the institution of an appropriate no disturbance buffer until the animal has passively dispersed. Mitigation measures could include restoration of temporarily disturbed habitats.

- If federal or state-listed amphibians not discussed above are determined to have the potential to occur on a project site or otherwise be impacted by the project, consultation shall be conducted with USFWS and CDFW respectively to determine the survey protocol and mitigation measures appropriate to the species. For projects that are determined to have the potential to result in "take" of state or federally-listed amphibian species, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement.

MM BIO-6: Minimize impacts to desert tortoise.

The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect desert tortoise in order to avoid, minimize, and mitigate for impacts:

- Consultation shall be conducted with CDFW and USFWS for any projects where desert tortoise or their sign is found on the site and/or the project is determined by a qualified biologist to have the potential to impact desert tortoise. In such cases, permits under Section 2080 of the Fish and Game Code and Section 7/10 of FESA authorizing incidental take of desert tortoise will be obtained from CDFW and USFWS respectively prior to implementation of the project, including any project-related ground disturbing activities. All requirements of the 2081/2080.1 permit and the Biological Opinion shall be implemented.

- The project proponent shall fully mitigate for habitat loss and potential take of desert tortoise. The project specific mitigation shall be developed in coordination with CDFW and USFWS, and would be reflective of the mitigation measures described in the Biological Opinion prepared by the USFWS for the project.

- Projects shall not be sited within areas identified for desert tortoise recovery or conservation according to the Draft Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*) (USFWS 2011) (such as designated critical habitat, ACECs, DWMAs, priority connectivity areas, and other areas or easements managed for desert tortoises).

- On project sites containing desert tortoise, consultation shall be conducted with USFWS and CDFW to determine the need for and/or feasibility of conducting desert tortoise translocation (changing location or position) to minimize the taking of the tortoises, if they are observed within the proposed project area. See http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/ for federal translocation plan guidance. Translocation plan development and implementation may require, but not be limited to: additional surveys of potential recipient sites; translocated and resident tortoise disease testing and health assessments; monitoring protocols; and consideration of climatic conditions at the time of translocation. Due to the potential magnitude of proposed renewable energy project impacts on desert tortoises, USFWS and CDFW must evaluate translocation efforts on a project by project basis in the context of cumulative effects.

- A desert tortoise authorized biologist approved by CDFW and USFWS shall be contracted to oversee and be responsible for ensuring compliance with desert tortoise avoidance and minimization measures before initiation of and during ground-disturbing activities. The desert tortoise biologist shall conduct clearance surveys, tortoise handling, artificial burrow construction, egg handling, and other procedures in accordance with the Guidelines for Handling Desert Tortoise During Construction Projects (Desert Tortoise Council 1999) or the most current USFWS guidance. The desert tortoise biologist shall be present on site from March 15 through October 31 (active season) during ground-disturbing activities in areas outside the tortoise exclusion fencing. It is recommended that the biologist be on call from November 1 to March 14 (inactive season) and checks such construction areas immediately before construction activities begin.

- Refer to the Ventura Fish and Wildlife Office website <http://www.fws.gov/ventura/endangered/species/surveys-protocol.html> for desert tortoise authorized biologist and monitor responsibilities and qualifications, and survey and translocation guidance, and refer to the Nevada Fish and Wildlife Office (desert tortoise recovery office) website <http://www.fws.gov/nevada/desert_tortoise/dtro/.html> for desert tortoise federal recovery plan documents. 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 2013 USFWS Desert Tortoise Field Manual available at the Ventura Fish and Wildlife Office website listed above, or more current guidance provided by CDFW and USFWS. All terms and conditions described in the Biological Opinion for the project prepared by the USFWS shall be implemented.

- The project owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. These measures include, but are not limited to, the following:

- Before starting project ground disturbing activities, the project proponent shall avoid potential desert tortoise harm by incorporating desert tortoise exclusion fencing into permanent fencing surrounding the proposed facility, and installing desert tortoise exclusion fencing around temporary project construction areas such as staging area, storage yards, excavations, and linear facilities. The tortoise exclusion fencing shall be constructed consistent with the USFWS 2010 Desert Tortoise Exclusion Fence Specifications or the most current guidance provided by USFWS and CDFW, and should be constructed in late winter or early spring to minimize impacts to desert tortoise and accommodate subsequent tortoise surveys.

- Within 24 hours before starting tortoise exclusion fence construction, the desert tortoise biologist shall survey the fence alignment and utility right-of-way alignments and clear desert tortoises from the area. The surveys and relocation methods shall be conducted using techniques approved by the CDFW and USFWS. Following construction of the tortoise exclusion fence, the desert tortoise biologist shall conduct clearance surveys within the fenced area to ensure as many desert tortoises as possible have been removed from the site. Burrows and tortoises identified within the project area shall be handled according to the 2013 USFWS Desert Tortoise Field Manual, and tortoises requiring relocation shall be handled in accordance with the project Desert Tortoise Relocation/Translocation Plan.

- Heavy equipment may enter the project site following the completion of project area desert tortoise clearance surveys by the desert tortoise biologist. Monitoring initial clearing and grading activities by the biologist will help ensure that tortoises missed during the initial clearance survey are moved from harm's way.

- The desert tortoise biologist shall be responsible for appropriate documentation and reporting to the permitting agencies for desert tortoises handled, in accordance with the project Desert Tortoise Relocation/Translocation Plan.

- Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates shall be kept closed, except for the immediate passage of vehicles, to prevent desert tortoise passage into the project area.

- Following installation of the desert tortoise exclusion fencing, both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected by the biological monitor. The biological monitor shall ensure that damage to the permanent or temporary fencing is immediately blocked to prevent tortoise access and permanently repaired within 72 hours between March 15 and October 31, and within 7 days between November 1 and March 14. The biological monitor shall inspect permanent fencing quarterly and after major rains to ensure fences are intact and there is no ground clearance under the fence that would allow tortoises to pass. The biologist shall inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground, and (d) within desert tortoise habitat (outside the permanently fenced area), before the materials are moved, buried, or capped. As an alternative, the materials may be capped before storing outside the fenced area or placing on pipe racks. Inspection or capping is not necessary if the materials are stored within the permanently fenced area after completing desert tortoise clearance surveys.

- The project proponent shall ensure vehicular traffic does not exceed 25 mph within the delineated project areas or on access roads in desert tortoise habitat. On unpaved roads suppress dust and protect air quality by observing a 10-mile per hour speed limit.

- To avoid vehicle impacts to desert tortoise, workers shall be responsible for inspecting the ground under the vehicle for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat outside the permanently fenced area. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, the desert tortoise biologist may remove and relocate the animal to a safe location.

- The project proponent shall develop and implement a Desert Tortoise Relocation/Translocation Plan that is consistent with current USFWS approved guidelines. The goal of the plan will be to safely exclude desert tortoises from within the fenced project area and relocate/translocate them to suitable habitat capable of supporting them, while minimizing stress and potential for disease transmission. The plan shall be developed in consultation with the USFWS to ensure the document does not conflict with conditions issued under an Incidental Take Statement. The plan will utilize the most recent USFWS guidance on translocation that includes siting criteria for the translocation site and control site, methods for translocation/relocation including the holding pen, and post translocation/relocation monitoring. Development and implementation of a translocation plan may require, but may not be limited to, additional surveys of potential recipient sites; disease testing and health assessments of translocated and resident tortoises; and consideration of climatic conditions at the time of translocation. The plan shall designate a relocation site as close as possible to the disturbance site that provides suitable conditions for long term survival of the relocated desert tortoise and outline a method for monitoring the relocated tortoise.

- The Desert Tortoise Relocation/Translocation Plan must be approved by the County, CDFW and USFWS prior to any project-related ground disturbing activity.

- Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the Project Manager for review and approval, a written report identifying which items of the plan have been completed, and a summary of all modifications to measures made during implementation of the plan. Written monthly progress reports shall be provided to the Project Manager for the duration of the plan implementation.

- The project proponent shall design and implement a Raven Monitoring, Management, and Control Plan that is consistent with the most current USFWS raven management guidelines. The goal of the plan shall be to minimize predation on desert tortoises by minimizing project-related increases in raven abundance. The plan shall be approved by the County, CDFW and USFWS prior to the start of any project-related ground disturbing activities.

MM BIO-7: Minimize impacts to special status reptiles (except desert tortoise).

The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect special status reptiles (with the exception of desert tortoise which has separate mitigation measures):

- Surveys for special status reptiles including but not limited to northern sagebrush lizard, Panamint alligator lizard, and Mojave fringe-toed lizard shall be conducted by a qualified biologist with experience surveying for and/or handling these species. If construction is scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted within two weeks prior to the commencement of construction. If construction is not scheduled to commence during the optimal period of identification for these species, then surveys shall be conducted during the optimal period of identification for these species (in the calendar year prior to construction) and again within two weeks prior to the commencement of construction.

- If any of these species are found on a project site during the surveys, CDFW will be contacted and avoidance and mitigation measures appropriate to the species will be developed. Avoidance measures could include actions such as waiting to begin construction until the animal passively disperses from the project site, active relocation of the animal, or allowing construction to begin with the institution of an appropriate no disturbance buffer until the animal has passively dispersed. Mitigation measures could include restoration of temporarily disturbed habitats.

- If federal or state-listed reptiles not discussed above are determined to have the potential to occur on a project site or otherwise be impacted by the project, consultation shall be conducted with USFWS and CDFW respectively to determine the survey protocol and mitigation measures appropriate to the species.

MM BIO-8: Minimize impacts to Swainson's hawk.

The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Swainson's hawk:

- Surveys shall be conducted for Swainson's hawk by a qualified biologist according to the *2010 Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California (*CDFG 2010) or more recent guidance, unless otherwise directed by CDFW. This guidance dictates survey methods for detecting Swainson's hawk nesting in or in the vicinity of a project site and measure to avoid and/or reduce impacts to nesting Swainson's hawk if they are found. The project applicant shall be responsible for coordinating with CDFW and ensuring that the CDFW guidance is implemented.

MM BIO-9: Minimize impacts to burrowing owl.

The following measures shall be implemented for any solar development project(s) or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect burrowing owl, unless otherwise directed by CDFW:

- In the calendar year that construction is scheduled to commence, surveys will be conducted by a qualified biologist to determine presence/absence of burrowing owls and/or occupied burrows in the project site and accessible areas within 500 feet according to the CDFW's *Staff Report on Burrowing Owls* (CDFG 2012). A winter survey will be conducted between December 1 and January 31 and a nesting survey will be conducted between April 15 and July 15. Pre-construction surveys will also be conducted within 30 days prior to construction to ensure that no additional burrowing owls have established territories since the initial surveys. If no burrowing owls are found during any of the surveys, no further mitigation will be necessary. If burrowing owls are found, then the following measures shall be implemented prior to the commencement of construction:
    - During the non-breeding season (September 1 through January 31) burrowing owls should be evicted by passive relocation as described in the Staff Report on Burrowing Owls (CDFG 2012).
    - Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75-meter protective buffer unless a qualified biologist approved by CDFW verifies through non-invasive means that either: (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.
    - If on-site avoidance is required, the location of the buffer zone will be determined by a qualified biologist. The developer shall mark the limit of the 75-meter buffer zone with yellow caution tape, stakes, or temporary fencing. The buffer will be maintained throughout the construction period.
    - Where on-site avoidance is not possible, CDFW should be consulted regarding the appropriate avoidance and minimization measures to avoid impacts to this species.

MM BIO-10: Minimize impacts to western snowy plover, western yellow-billed cuckoo, Inyo California towhee, and bank swallow.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect federally-listed bird species (without published survey protocols) including the western snowy plover, western yellow-billed cuckoo, Inyo California towhee, and bank swallow, the USFWS shall be contacted to develop project specific measures to determine the potential for presence/absence of the species in the project area and appropriate avoidance and mitigation measures. For projects in the desert portions of the County, contact the Palm Springs Fish and Wildlife Office. For projects in the forested portions of the County or the Owens Valley, contact the Nevada Fish and Wildlife Office. Mitigation measures shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat. For projects that are determined to have the potential to result in "take" of federally-listed bird species, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement.

MM BIO-11: Minimize impacts to southwestern willow flycatcher.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect southwestern willow flycatcher, surveys shall be conducted according to Southwestern Willow Flycatcher Protocol Revision 2000 (http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/SWWFlycatcher.2000.protocol.pdf) following the guidelines for the revised protocol for project-related surveys or the most recent guidance as determined in coordination with the USFWS Pacific Southwest Region Nevada Fish and Wildlife Office. For projects that are determined to have the potential to result in "take" of southwestern willow flycatcher, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement. Mitigation measures shall be implemented and shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat.

MM BIO-12: Minimize impacts to bald and golden eagle.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect bald and golden eagles, the project proponent shall implement the following measures to avoid and offset impacts:

- Site specific surveys and monitoring of known or suspected eagle nesting and foraging habitat in areas where eagles occur (i.e., all of California) shall be conducted to provide background information related to eagle take permits. Surveys shall be conducted using (at least) methods and qualified personnel as recommended by CDFW and USFWS. Surveys shall be conducted according to the USFWS's 2010 *Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations* (available online at http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/usfws_interim_goea_monitoring_protocol_10march2010.pdf), the USFWS's 2004 *Protocol for Evaluating Bald Eagle Habitat and Populations in California* and CDFW's 2010 *Bald Eagle Breeding Survey Instructions* (both documents are available online at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html) or the most recent guidance regarding non-breeding season surveys for winter, migratory, and floating populations of eagles determined in coordination with CDFW and USFWS.

- Where proposed projects may result in take of bald or golden eagles, the USFWS shall be consulted to determine the standards and requirements for the permit titled "Eagle Take – Necessary to Protect Interests in a Particular Locality." Eagle take permits are performance based and will hinge on the merits of the application. The permit application form and related information are on the USFWS website: http://www.fws.gov/migratorybirds/baldeagle.htm. The final rule (Federal Register / Vol. 74, No. 175, September 11, 2009), Environmental Assessment (http://www.fws.gov/migratorybirds/CurrentBirdIssues/BaldEagle/FEA_EagleTakePermit_Final.pdf), implementation and protocol documents, and consultations with USFWS will provide additional guidance.

- Projects shall avoid, to the extent needed to comply with state and federal requirements, siting project facilities and infrastructure in a location or manner that would cause bald and golden eagle mortality, injury, and/or disturbance; i.e., locate facilities outside of eagle breeding home ranges as well as important breeding, wintering, and dispersal foraging areas, migration stopovers and corridors, and areas used by eagles for thermal or orographic lift.

- Projects shall incorporate actions to avoid eagle disturbance (refer to the USFWS National Bald Eagle Management Guidelines, May 2007 and Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance, Attachment II) in consultation with the USFWS to obtain the most current guidance and measures.

MM BIO-13: Minimize impacts to least Bell's vireo.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect least Bell's vireo, surveys shall be conducted according to the USFWS's *Least Bell's Vireo Survey Guidelines* (http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/LBVireo.2001.protocol.pdf) or the most recent guidance as determined in coordination with the USFWS Pacific Southwest Region Nevada Fish and Wildlife Office. For projects that are determined to have the potential to result in "take" of least Bell's vireo, consultation will be conducted with USFWS under either Section 7 or Section 10 of FESA and an Incidental Take Statement will be obtained prior to project commencement. Mitigation measures shall be implemented and shall include, but are not limited to, species specific habitat assessments and/or focused surveys to determine whether federally-listed bird species or their habitat are present in or adjacent to the project site, measures to avoid or minimize impacts to these species during construction and operation of the solar development, and compensatory mitigation for loss of habitat.

MM BIO-14: Minimize impacts to bighorn sheep.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect bighorn sheep, the project applicant shall retain a qualified biologist, approved by the USFWS and CDFW to conduct preconstruction surveys for Sierra Nevada bighorn sheep and/or Peninsular and Mojave bighorn sheep depending on the location of the project. Due to low detection probabilities, the following data shall be used when evaluating potential projects impacts to the species: data relative to historic ranges of bighorn sheep; known and potential wildlife corridors (such as, those identified in the BLM Mojave and Colorado deserts land use plans); point location data; and existing literature. If bighorn sheep or their migration routes exist, are known or likely to occur on or in the vicinity of the project site, and may be affected by project-related activities, the consultation shall be conducted with USFWS, CDFW, and other stakeholders, as appropriate, regarding avoidance, minimization, compensatory mitigation, or site abandonment. For projects that are determined to have the potential to result in "take" of state or federally-listed bighorn sheep, consultation shall be conducted with CDFW or USFWS respectively and take authorization shall be obtained prior to project commencement.

MM BIO-15: Minimize impacts to Sierra Nevada red fox.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Sierra Nevada red fox, CDFW shall be contacted to develop project specific measures to determine the potential for presence/absence of this species in the project area and appropriate avoidance and mitigation measures. Mitigation measures shall include, but are not limited to, a species specific habitat assessment and/or focused surveys to determine whether Sierra Nevada red fox or its habitat is present in or adjacent to the project site, measures to avoid or minimize impacts to this species during construction and operation of the solar development, and compensatory mitigation for loss of habitat. For projects that are determined to have the potential to result in "take," consultation will be conducted with CDFW under CESA and incidental take authorization will be obtained prior to project commencement.

MM BIO-16: Minimize impacts to Mohave ground squirrel.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect Mohave ground squirrel, consultation shall be conducted with CDFW to determine the survey protocol and mitigation measures appropriate to the project. For projects that are determined to have the potential to result in "take" of Mohave ground squirrel, consultation shall be conducted with CDFW and take authorization shall be obtained prior to project commencement. Avoidance and mitigation measures shall include but are not limited to the following:

- The project applicant shall retain a CDFW-approved Mohave ground squirrel biologist to oversee CDFW required measures including but not limited to tasks such as conducting clearance surveys, handling Mohave ground squirrels, artificial burrow construction, and other procedures in accordance with CDFW protocols.

- The CDFW-approved biologist shall conduct a Mohave ground squirrel preconstruction survey in areas subject to construction disturbance no less than 30 days before initial ground disturbance activities start according to the most current CDFW guidelines on presuming presence/absence of the animals, conducting surveys and survey protocols.

- If Mohave ground squirrels are found in project site burrows during project-related activities, the qualified biologist will relocate the animal in consultation with CDFW to a burrow at a CDFW approved protected offsite location.

MM BIO-17: Minimize impacts to American badger and kit fox.

Prior to the approval of any solar development projects or related infrastructure under the REGPA that is determined during the project level biological resource evaluation (Mitigation Measure BIO-1) to have the potential to affect American badger and/or kit fox, the following measures shall be implemented to avoid, minimize, and mitigate for impacts to these species:

- The project proponent shall prepare and implement an American badger and/or kit fox management plan. The plan shall be prepared in accordance with the most current CDFW guidelines for these species. The plan shall be approved by CDFW prior to implementation. The plan shall include the following components:

    - Preconstruction surveys and mapping efforts: biological monitors shall perform pre-construction surveys for badger and kit fox dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active, including characterization of den type for kit fox (natal, pupping, likely satellite, atypical) per CDFW guidance, and mapped along with major project design elements.
    - 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. Excavation and filling activities shall be performed by the qualified biologist. Potentially and confirmed active dens shall not be disturbed during the whelping/pupping season (February 1 to September 30).
    - Monitoring requirements. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the qualified biologist for three consecutive nights (during weather conditions favorable for detection) using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then

be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den.

- Passive relocation strategies. The management plan shall contain, at a minimum, several strategies to passively relocate animals from the site. These methods may entail strategic mowing, fencing, or other feasible construction methods to assist in moving animals offsite toward desirable land. The plan shall address location of preferred offsite movement of animals, based on CDFW data and land ownership. Private land is to be avoided to the maximum extent practicable.
- Escape dens shall be installed along the perimeter fencing to reduce predation risk.
- Kit fox disease prevention measures. The qualified biologist shall notify the County project manager and CDFW within 24 hours if a dead kit fox is found or appears sick. The plan must also detail a response to a kit fox injury, including a necropsy plan, reporting methods, and scope of adaptive methods in the event of a known or suspected outbreak. The project owner will pay for any necropsy work.

MM BIO-18: Minimize impacts to other special status birds, raptors, migratory birds, nesting birds and bats.

The following measures apply to all projects developed under the REGPA that are determined during the project level biological resource evaluation to have the potential to impact nesting birds and/or bats and shall be implemented to avoid, minimize, and mitigate for impacts to birds and bats. These measures are for bird species without established protocols and non-listed bird species that lack species-specific mitigation measures (not applicable to the common raven). For future development proposed to be located on or near land with old mines, specific survey protocols and mine closure considerations shall be developed.

Pre-Construction Bird Surveys and Avoidance Measures

If project construction occurs between roughly February 1 and August 31, a County-approved qualified biologist(s) shall conduct preconstruction surveys for nesting birds. The biologist(s) conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques. Surveys shall be conducted in accordance with the following guidelines:

- Surveys shall cover all potential nesting habitat in the project site and within 500 feet of the project site and linear facilities boundaries – inaccessible areas outside of the project boundary may be surveyed from within the project site or publicly accessible land with the aid of binoculars.

- Vegetation removal or other ground disturbing activities should be avoided between February 1 and August 31; however if it cannot be avoided, the avian biologist shall survey breeding/nesting habitat within the survey radius described within one week prior to the start of project activities.

- CDFW and/or USFWS must provide concurrence with the survey findings prior to the start of construction. Site preparation and construction activities may begin after receiving the concurrence and if no breeding/nesting birds are observed. Additional follow up surveys shall be conducted if periods of construction inactivity exceed one week in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.

If active nests are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest, the size of which is to be determined by the project biologist in consultation with CDFW and /or USFWS) and a monitoring plan shall be developed. The nesting bird plan shall identify the types of birds that may nest in the project area, the proposed buffers, monitoring requirements, and reporting standards that will be implemented to ensure compliance with the MBTA and Fish and Game Codes 3505 and 3505.3. The avian biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed.

Pre-Construction Bat Surveys and Avoidance Measures

Preconstruction bat surveys shall be conducted by a qualified biologist(s) familiar with standard bat survey techniques. If night or day roosting bats are identified in project structures they shall not be disturbed and a 100-foot non-disturbance buffer shall be placed between the roost and the construction activities until a determination is made whether the roost is a maternity roost or a non-breeding roost. Maternity colonies shall not be disturbed until coordination with CDFW is conducted to determine appropriate measures including an appropriate no-disturbance buffer. If the qualified bat biologist determines roosting bats consist of a non-breeding roost, the individuals shall be safely evicted under the direction of a qualified bat biologist. CDFW shall be notified of any bat evictions within 48 hours.

Bat and Avian Protection Plan

A bat and avian protection plan shall be developed to protect bats, migratory birds, and golden eagles while improving conservation, safety, and reliability for utility customers. The plan shall include measures to monitor the death and injury of birds from solar flux, radiance, and collisions with facility features such as reflective mirror-like surfaces. Guidance in the California Guidelines (Appendix D of the REAT's BMP Guidelines) and Avian Protection Plan Guidelines published by the APLIC and USFWS (2005) shall be consulted. The plan shall be approved by the County, CDFW, and USFWS prior to the start of project construction. The following monitoring/detection recommendations from the USFWS Forensics Laboratory (Kagan et al. unpub.) shall be considered:

- Install video cameras sufficient to provide 360-degree coverage around each tower to record birds (and bats) entering and exiting the flux.

- For at least 2 years (and in addition to the planned monitoring protocol), conduct daily surveys for birds (at all 3 facilities), as well as insects and bats around each tower at the base of and immediately adjacent to the towers in the area cleared of vegetation. Timing of daily surveys can be adjusted to minimize scavenger removal of carcasses. Surveys in the late afternoon might be optimal for bird carcasses, and first light for bat carcasses.

- Use dogs for monitoring surveys to detect dead and injured birds that have hidden themselves in the brush, both inside and outside the perimeter of the facility.

- To decrease removal of carcasses, implement appropriate raven deterrent actions.

General Bird Mortality Avoidance Measures

The following measures are recommended by the USFWS Forensics Laboratory and shall be implemented to minimize bird mortality from birds attracted to solar facilities:

- All potential nesting vegetation (e.g., trees, shrubs) shall be removed within the fenced area of the facility to decrease attractive habitat.
- The most current science regarding visual cues to birds that the solar panel is a solid structure shall be implemented. This may include but is not limited to UV-reflective or solid, contrasting bands spaced no further than 28 centimeters from each other.
- Power tower operation shall be suspended during peak migration times for indicated species.
- Vertical orientation of mirrors shall be avoided whenever possible (for example, mirrors shall be tilted during washing).
- If the use of open evaporation ponds is permitted for the project and especially if the water would be considered toxic to wildlife, ponds shall be designed to discourage bird and other wildlife use by properly netting or otherwise covering the pond.
- Perch deterrent devices shall be placed on tower railings.
- Exclusionary measures shall be employed to prevent bats from roosting in and around the facility.

Minimize Impacts from Solar Flux

Solar thermal developments utilizing solar power tower technologies shall not be sited in or within 1,000 feet of Important Bird Areas (as determined by the County in consultation with Responsible and Trustee agencies), the OVSA, or riparian or other aquatic habitats including lakes, ponds, rivers, streams, and perennial wetland habitats unless potentially significant impacts are avoided. This requirement generally does not apply to seasonal or ephemeral wetland habitats unless deemed necessary by a qualified biologist in light of the wetland's specific habitat value for bird species.

Avoid Impacts from Electric Lines and Lights

The following design measures shall be implemented for applicable projects to minimize impacts to bats and birds:

- Transmission lines and electrical components shall be installed and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) or the most recent guidance to reduce the likelihood of electrocutions of raptors and other large birds.

- Transmission lines and electrical components shall be installed and maintained in accordance with the APLIC's *Mitigating Bird Collisions with Power Lines: The State of the Art in 1994* (Edison Electric Institute 2004) or the most recent guidance to reduce the likelihood of bird collisions.

- Low and medium voltage connecting power lines shall be placed underground, if feasible. If burial of the lines is not feasible due to cost or other logistical reasons (for example in shallow bedrock areas) or may cause unacceptable impacts to biological habitats and their dependent species, overhead lines may be installed in compliance with the following requirements:

  - low and medium voltage overhead lines shall be sited away from high bird crossing locations, such as between roosting and feeding areas or between lakes, rivers, and nesting areas; and/or
  - low and medium voltage overhead lines shall be installed parallel to tree lines or be otherwise screened so that collision risk is reduced.

- Permanent communication towers and permanent meteorological towers shall not be constructed with guy wires, if feasible. If guy wires are necessary for permanent or temporary towers, bird flight diverters or high visibility marking devices shall be used. In such cases a monitoring plan shall be developed and carried out to determine the diverters'/devices' effectiveness in reducing bird and bat mortality.

- Facility lighting shall be installed and maintained to prevent upward and side casting of light towards wildlife habitat and motion sensors shall be used. If the FAA requires turbine or tower lighting to alert aircraft, red or white strobe lights shall be used on the structures to minimize avian collision risks. The strobes shall be on for as brief of a period as possible and the time between strobe or flashes shall be the longest allowable. Strobes shall be synchronized so that a strobe effect is achieved and towers are not constantly illuminated.

- Lights with sensors and switches shall be used to keep lights off when not required.

- The use of high-intensity lighting, steady-burning, or bright lights such as sodium vapor or spotlights shall be minimized.

MM BIO-19: Minimize impacts to special status natural communities and protected natural areas.

Solar development authorized under the REGPA will not be sited within any special status natural communities or protected natural areas. If solar development is sited adjacent to any special status natural communities or protected natural areas, a management plan will be developed in consultation with CDFW and/or USFWS. The management plan will address the potential offsite effects of the construction and on-going operations of the facility on special status species including but not limited to the effects of human disturbance, noise, nighttime maintenance activities, increased lighting, increased traffic on desert roads, and barriers to movement for special status species. The management plan will also address potential mechanisms of offsite habitat degradation such as introduction of invasive weeds, introduction or attraction of feral animals or other species attracted to areas with anthropogenic disturbance, hydrologic disruption due to groundwater impacts or alteration of surface drainage patterns, and increased risk of wildfires. The management plan will also outline the specific measures to be undertaken to avoid and/or minimize indirect effects of the solar development on the adjacent sensitive habitat and special status species and include a plan for long term monitoring of the adjacent habitat as well as an adaptive management plan.

If riparian communities (other than water birch riparian scrub which is a special status natural community that must be avoided) are present in a project area, impacts to riparian communities shall be avoided or minimized by implementing the following measures:

- The project shall be redesigned or modified to avoid direct and indirect impacts on riparian communities, if feasible.

- Riparian communities adjacent to the project site shall be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the riparian vegetation. Depending on site-specific conditions, this buffer may be narrower or wider than 20 feet in coordination with the project biologist. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- The potential for long-term loss of riparian vegetation shall be minimized by trimming vegetation rather than removing the entire shrub. Shrub vegetation shall be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration of the species. Cutting shall be limited to a minimum area necessary within the construction zone. This type of removal shall be allowed only for shrub species (all trees shall be avoided) in areas that do not provide habitat for special status species (e.g., willow flycatcher).

- If riparian vegetation is removed as part of a project, the loss of riparian vegetation shall be mitigated to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including CDFW and USFWS). Compensation shall be provided at a minimum 1:1 ratio (1 acre restored or created for every 1 acre removed) and may be a combination of on-site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan shall be developed and implemented that describes how riparian habitat shall be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and federal agencies.

MM BIO-20: Minimize impacts to waters of the US/State, including wetlands.

The following measures apply to all projects developed under the REGPA that are determined during the project level biological resource evaluation to have the potential to impact waters of the US or waters of the State, including wetlands, and shall be implemented to avoid, minimize, and mitigate for such impacts. These measures shall be incorporated into contract specifications and implemented by the construction contractor. In addition, the project proponent shall ensure that the contractor incorporates all state and federal permit conditions into construction specifications.

- Wetlands and other waters of the US/state shall be delineated on the project site using both USACE and CDFW definitions of wetlands. USACE jurisdictional wetlands shall be delineated using the methods outlined in the USACE 1987 Wetlands Delineation Manual and the Arid West Manual. This information shall be mapped and documented as part of the CEQA documentation, as applicable, and in wetland delineation reports. All applicable permits shall be obtained prior to impacting waters of the US/State including CWA Section 404 and 401 permits from the USACE and the RWQCB respectively and a Streambed Alteration Agreement from CDFW.

- Standard erosion control measures shall be implemented for all phases of construction and operation where sediment runoff from exposed slopes threatens to enter waters of the State and/or waters of the US. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes trending towards a drainage shall be stabilized to reduce erosion potential.

- Wetland habitats that occur near the project site shall be protected by installing environmentally sensitive area fencing at least 20 feet from the edge of the wetland. Depending on site-specific conditions and permit requirements, this buffer may be wider than 20 feet in coordination with the project biologist. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications shall contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.

- Installation activities shall be avoided in saturated or ponded wetlands during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, shall be used.

- Where determined necessary by resource specialists, geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, or geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation.

- Exposed slopes and stream banks shall be stabilized immediately on completion of installation activities. Other waters of the US shall be restored in a manner that encourages vegetation to reestablish to its pre-project condition and reduces the effects of erosion on the drainage system.

- In highly erodible stream systems, banks shall be stabilized using a non-vegetative material that will bind the soil initially and break down within a few years. If the project engineers determine that more aggressive erosion control treatments are needed, geotextile mats, excelsior blankets, or other soil stabilization products shall be used.

- During construction, trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of drainages shall be removed in a manner that minimizes disturbance of the drainage bed and bank.

- If wetlands are filled or disturbed as part of the highway project, compensation will be implemented for the loss of wetland habitat to ensure no net loss of habitat functions and values. Compensation ratios shall be based on site-specific information and determined through coordination with state and federal agencies (including CDFW, USFWS, and USACE). The compensation shall be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of on site restoration/creation, off-site restoration, or mitigation credits. A restoration and monitoring plan shall be developed and implemented if onsite or offsite restoration or creation is chosen. The plan shall describe how wetlands shall be created and monitored for the duration established by the regulatory agency.

MM BIO-21: Minimize impacts to movement or migratory corridors or native wildlife nursery sites.

Solar development authorized under the REGPA should not be sited in or within 1,000 feet of any areas determined by the County in consultation with Responsible and Trustee agencies to be Important Bird Areas, essential connectivity areas or linkages identified in the 2001 Missing Links in California's Landscape Project (Penrod et al. 2001), or USFWS identified desert tortoise priority connectivity areas unless potentially significant impacts are avoided.

MM BIO-22: Minimize impacts to invasive plant species or noxious weeds.

For projects implemented under the REGPA that are determined during the project level biological resource evaluation to have the potential to result in the spread of invasive plant species or noxious weeds, the following mitigation measures shall be implemented:

To prevent the introduction and spread of noxious weeds, a project-specific integrated weed management plan shall be developed for approval by the permitting agencies, which would be carried out during all phases of the project. The plan shall include the following measures, at a minimum, to prevent the establishment, spread, and propagation of noxious weeds:

- The area of vegetation and/or ground disturbance shall be limited to the absolute minimum and motorized ingress and egress shall be limited to defined routes.

- Project vehicles shall be stored onsite in designated areas to minimize the need for multiple washings of vehicles that re-enter the project site.

- Vehicle wash and inspection stations shall be maintained onsite and the types of materials brought onto the site shall be closely monitored.
- The tires and undercarriage of vehicles entering or reentering the project site shall be thoroughly cleaned.
- Native vegetation shall be re-established quickly on disturbed sites.
- Weed Monitor and quickly implement control measures to ensure early detection and eradication of weed invasions.
- Use certified weed-free straw, hay bales, or equivalent for sediment barrier installations.

MM BIO-23: Implement general design guidelines to minimize impacts to biological resources.

All projects authorized under the REGPA will incorporate the following design guidelines as applicable in coordination with the County:

- Design and site the project, in consultation with the permitting agencies, to avoid or minimize impacts to sensitive and unique habitats and wildlife species. Locate energy generation facilities, roads, transmission lines, and ancillary facilities in the least environmentally sensitive areas (such as away from riparian habitats, streams, wetlands, vernal pools, drainages, sand dunes, critical wildlife habitats, wildlife conservation, management, other protected areas, or unique plant assemblages).
    - Design facilities to use existing roads and utility corridors as much as possible to minimize the number and length/size of new roads, laydown, and borrow areas.
    - Design transmission line poles, access roads, pulling sites, storage, and parking areas to avoid special status species or unique plant assemblages adjacent to linear facilities.
    - Locate and/or design facilities to minimize or mitigate wildlife movement disruptions.
    - Locate and/or design facilities to minimize or mitigate wildlife movement disruptions.
    - Design facilities to discourage their use as bird perching, drinking, or nesting sites.
    - Design facility lighting to prevent side casting of light toward wildlife habitat and skyward protection of light that may disorient night-migrating birds.
    - Avoid using or degrading high value or large intact habitat areas, such as areas identified as sensitive natural habitat, Wilderness Areas, ACEC, critical habitat; riparian, sand dunes.
    - Avoid severing movement and connectivity corridors. Consider existing conservation investments such as protected areas and lands held in trust for conservation purposes.

- o Locate facilities so they do not disrupt sand transport processes nor remove some or all of a sand source that contributes to sand dune systems harboring listed or otherwise sensitive species. Avoid armoring nearby dune system sand sources.

MM BIO-24: Minimize impacts to groundwater dependent vegetation.

Any solar development projects or related infrastructure implemented under the REGPA shall comply with the terms of the Inyo County/ Los Angeles Long Term Water Agreement. A qualified biologist/botanist shall evaluate the potential for any project implemented under the REGPA to impact groundwater dependent vegetation. If the qualified biologist/botanist determines that the project has the potential to impact groundwater dependent vegetation, a groundwater dependent vegetation management plan will be prepared. The plan will include an evaluation of the potential impacts to groundwater dependent vegetation and appropriate measures to avoid or reduce the impacts to the extent feasible. The plan shall be prepared in coordination with the County and should describe any appropriate monitoring, such as vegetation and/or water table monitoring, and prescribe mitigation to offset the impacts of the project on groundwater dependent vegetation as deemed appropriate by the qualified biologist in coordination with the County.

4.4.6 Summary of Impacts and Mitigation

A summary of the potential impacts to biological resources for each SEDA and the OVSA and the associated mitigation measure(s) for each impact is included as Table 4.4-13.

Table 4.4-13
SUMMARY OF SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES AND MITIGATION MEASURES BY LOCATION

Area	Impact	Mitigation Measure(s)
Western Solar Energy Group		
Laws SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Fish	BIO-4
	Special Status Amphibians (Including Sierra Nevada Yellow-Legged Frog, Inyo Mountains Slender Salamander, Owens Valley Web-Toed Salamander, and Northern Leopard Frog)	BIO-5
	Desert Tortoise	BIO-6
	Swainson's Hawk	BIO-8
	Burrowing Owl	BIO-9
	Southwestern Willow Flycatcher	BIO-11
	American Badger and Kit Fox	BIO-17
	Other Special Status Birds, Raptors, Migratory Birds and Bats	BIO-18
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24

Table 4.4-13 (cont.)
SUMMARY OF SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES AND MITIGATION MEASURES BY LOCATION

Area	Impact	Mitigation Measure(s)
Western Solar Energy Group (cont.)		
Owens Lake SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Fish	BIO-4
	Special Status Amphibians (Including Sierra Nevada Yellow-Legged Frog, Inyo Mountains Slender Salamander, Owens Valley Web-Toed Salamander, and Northern Leopard Frog)	BIO-5
	Desert Tortoise	BIO-6
	Special Status Reptiles Including Northern Sagebrush Lizard and Mojave Fringe-Toed Lizard	BIO-7
	Burrowing Owl	BIO-9
	Western Snowy Plover	BIO-10
	Sierra Nevada Bighorn Sheep	BIO-14
	Mohave Ground Squirrel	BIO-16
	American Badger and Kit Fox	BIO-17
	Other Special Status Birds, Raptors, Migratory Birds and Bats	BIO-18
	Least Bell's Vireo	BIO-13
	Sierra Nevada Bighorn Sheep	BIO-14
	Mohave Ground Squirrel	BIO-16
	American Badger and Kit Fox	BIO-17
	Other Special Status Birds, Raptors, Migratory Birds and Bats	BIO-18
	Special Status Natural Communities and Protected Natural Areas	BIO-19
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24
Pearsonville SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Desert Tortoise	BIO-6
	Mohave Ground Squirrel	BIO-16
	American Badger and Kit Fox	BIO-17
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24

Table 4.4-13 (cont.)
SUMMARY OF SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES AND MITIGATION MEASURES BY LOCATION

Area	Impact	Mitigation Measure(s)
Western Solar Energy Group (cont.)		
Owens Valley Study Area	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Fish	BIO-4
	Special Status Amphibians (Including Sierra Nevada Yellow-Legged Frog, Inyo Mountains Slender Salamander, Owens Valley Web-Toed Salamander, and Northern Leopard Frog)	BIO-5
	Desert Tortoise	BIO-6
	Swainson's Hawk	BIO-8
	Burrowing Owl	BIO-9
	Western Yellow-Billed Cuckoo	BIO-10
	Southwestern Willow Flycatcher	BIO-11
	Bald Eagle	BIO-12
	Bank Swallow	BIO-10
	Least Bell's Vireo	BIO-13
	Sierra Nevada Bighorn Sheep	BIO-14
	Sierra Nevada Red Fox	BIO-15
	American Badger and Kit Fox	BIO-17
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Special Status Natural Communities and Protected Natural Areas	BIO-19
	Movement or Migratory Corridors or Native Wildlife Nursery Sites	BIO-21
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24
Southern Solar Energy Group		
Trona SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Desert Tortoise	BIO-6
	Inyo California Towhee	BIO-10
	Mohave Ground Squirrel	BIO-16
	American Badger and Kit Fox	BIO-17
	Other Special Status Birds, Raptors, Migratory Birds and Bats	BIO-18
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24

Table 4.4-13 (cont.)
SUMMARY OF SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES AND MITIGATION MEASURES BY LOCATION

Area	Impact	Mitigation Measure(s)
Eastern Solar Energy Group		
Chicago Valley SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Desert Tortoise	BIO-6
	American Badger and Kit Fox	BIO-17
	Special Status Natural Communities and Protected Natural Areas	BIO-19
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24
Charleston View SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Desert Tortoise	BIO-6
	American Badger and Kit Fox	BIO-17
	Other Special Status Birds, Raptors, Migratory Birds and Bats	BIO-18
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Movement or Migratory Corridors or Native Wildlife Nursery Sites	BIO-21
	Movement or Migratory Corridors or Native Wildlife Nursery Sites	BIO-21
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24
Sandy Valley SEDA	Ground Disturbance or Vegetation Trimming or Removal	BIO-1, BIO-2, BIO-3
	Rare Plants	BIO-1, BIO-2, BIO-3, BIO-23
	Special Status Wildlife (General Impacts)	BIO-1, BIO-2, BIO-3, BIO-23
	Desert Tortoise	BIO-6
	Movement or Migratory Corridors or Native Wildlife Nursery Sites	BIO-21
	Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	BIO-20
	Impacts Due to the Spread of Invasive Plant Species or Noxious Weeds	BIO-22
	Impacts to Groundwater Dependent Vegetation	BIO-24

4.4.7 Significant Unavoidable Adverse Impacts

At the program level of analysis, impacts to biological resources are considered significant an unavoidable for all SEDAs and the OVSA even after all feasible mitigation due to the possibility of the impacts to avian species (depending on the technology chosen). Certain impacts resulting from implementation of the REGPA are unable to be mitigated and would remain significant and unavoidable in all SEDAs and the OVSA. Impacts to birds from solar flux and luminosity associated with solar thermal power towers, as well as collision with utility scale solar facilities would be unmitigable and would remain significant and unavoidable. By implementing Mitigation Measure BIO-18, which contains measures to minimize bird mortality and to minimize impacts from solar flux, luminosity, and collisions, the effects of the impacts may be reduced, but would not be able to be reduced to below a level of significance. There are currently no measures to fully avoid or mitigate for these impacts. If mitigation measures are not developed to address these impacts, they will remain significant and unavoidable. Mitigation measures have been identified for the remainder of the potential impacts to biological resources identified in this section. During future project level analysis, mitigation measures would be developed for the individual resources as outlined in this PEIR. With the implementation of the proposed mitigation measures, the remaining impacts to biological resources identified in this section are expected to be reduced to a less than significant level.

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4.5 CULTURAL RESOURCES

Cultural resources can reflect the history, diversity, and culture of the region and people who created them. They are unique in that they are often the only remaining evidence of the activity that occurred historically. Inyo County is rich in cultural resources that could be affected by development of renewable energy projects without adequate protections in place. This section considers and evaluates the potential impacts of the REGPA on cultural resources. Cultural resources can be natural or built, purposeful or accidental, physical or intangible. They encompass archaeological, traditional, and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites. Cultural resources include sites of important events, traditional cultural places and sacred sites, and places associated with an important person.

4.5.1 Existing Conditions

4.5.1.1 Cultural Setting

Prehistoric Setting

Pleistocene-Holocene Transition

The initial occupation of the County appears to have occurred 12,000 years before present (BP) time. In the County, this early period (15,000-10,000 years BP), often called the Paleoindian period or Pleistocene-Holocene Transition, is characterized by two cultural traditions: the Western Stemmed Point tradition, an interior tradition identified by stemmed projectile points; and the Clovis tradition, an interior tradition identified by fluted projectile points (Erlandson and Braje 2012). Archaeological evidence from the Pleistocene-Holocene Transition is scarce and usually only dated by the presence of diagnostic artifacts such as fluted Clovis projectile points and crescent-shaped flaked stone tools (Erlandson et al. 2007; Rondeau et al. 2007).

Within the County, fluted projectile points have been found along the shores of Owens Lake, in Volcanic Tablelands, Death Valley, Panamint Dry Lake, Little Lake, and near Bishop in Owens Valley (Rondeau et al. 2007). *Olivella* shell beads from several sites within the County, including the Stahl Site (CA-INY 182), have yielded radiocarbon dates within the Pleistocene-Holocene Transition and indicate trade networks with coastal peoples. These sites tend to be located adjacent to lakes or marshes (Erlandson et al. 2007; Fitzgerald et al. 2005; Sutton et al. 2007). Traditionally the people were thought to be mobile big-game hunters; however, recent studies suggest that their economies were more diverse and focused on smaller animals and plant foods, and that large game played a minor role (Erlandson et al. 2007).

Early Holocene

By the Early Holocene (10,000-8,000 years BP) there is more information concerning the people living in the County. Data from excavations at the Lubkin Creek site, south of Lone Pine, suggest a reliance on large-game hunting and that during this period, people moved their residences on a regular basis throughout the year (Meridian 2014).

The Western Pluvial Lakes Tradition developed into the Lake Mojave Complex as conditions became progressively drier following the end of the Pleistocene. The Lake Mojave Complex spanned a period of approximately 10,000 to 8,000 years ago. The main artifacts associated with this complex are Great Basin stemmed series projectile points (Lake Mojave and Silver Lake points) and abundant stone tools with flaked from both sides (bifaces), along with tools with steep-edged flaking on one side (unifaces), crescent-shaped tools, and occasional cobble-core tools and ground stone implements. These sites tend to be surface deposits found around the ancient shorelines of rain-filled lakes such as China Lake in the southern part of the County. The assemblages primarily appear to represent temporary small camps and work stations. Infrequent accumulations of residential debris indicate that camps with longer use periods are also present.

People of the Lake Mojave Complex had adapted to wetland environments and hunted and gathered. Site types in the Mojave Desert include residential bases, lithic workshops, and small camps. The people lived in small social units that used a forager-like strategy and revisited the same locations (Sutton, et al. 2007; Warren 1984).

Middle Holocene

The Pinto Complex is the characteristic cultural system of the Middle Holocene (8,000-4,000 years BP). This complex appears to have overlapped with the Lake Mojave Complex, perhaps indicating that new populations arrived in the region, bringing with them new technologies (Sutton et al. 2007). During the first part of the Middle Holocene, a drier climate resulted in shallow and fluctuating lake levels. Sites occur within remnant pluvial lake basins, along ancient dry stream channels, spring/seep locations, and in upland contexts.

Larger Pinto Complex sites contain midden (refuse) soils and a broader range of archaeological materials than do the smaller archaeological sites. The Pinto Complex artifact assemblage includes Pinto points, leaf-shaped points and knives, drills, heavy-keeled scrapers, retouched flakes, choppers, hammerstones, shell beads, less frequent large mammal remains (i.e., bighorn sheep, deer, antelope, etc.) than earlier periods, and small fauna. The large numbers of handstones and flat millingstones indicates that intensive plant exploitation was important to the lives of the County's inhabitants and access to plant resources appears to have been an important factor in determining site placement.

Groups most likely consisted of multiple families living in centralized sites that were close to several locations used to gather resources (Sutton et al. 2007; Warren 1984). The characteristic Pinto Period assemblage includes large and small leaf-shaped projectile points and knives, domed and elongated keeled scrapers, several forms of well-made flake scrapers, flat millingstones, and manos. Drills, engraving tools, and *Olivella* shell beads also occur. The diagnostic artifact for the period is the stemmed, indented-base Pinto series projectile point (Sutton et al. 2008; Warren 1984; Warren and Crabtree 1986).

Late Holocene

The beginning of the Late Holocene Period (4,000–200 years BP) in the Mojave Desert portions of the County is not as well-known as previous or subsequent periods. The Gypsum Complex (4,000-1,750 years BP) appears to continue the Pinto Complex trend of people focusing their diet more on plant resources than animal ones. One of the plants important in the diet was mesquite. The introduction of the mortar and pestle at this time made processing of mesquite pods easier. Diagnostic artifact types of the Gypsum Complex include Gypsum Cave, Humboldt Concave Base, and Elko series projectile points. Gypsum sites tend to be rather ephemeral and are found in diverse locations across the landscape (Bamforth 1990; Sutton, et al. 2007 Warren 1984). The continued presence of shell ornaments is evidence of established trade routes with the southern California coast (Warren 1984).

In the Owens Valley and the eastern Sierra, the Late Holocene is represented by the Newberry Period (3,500-1,350 years BP). Gypsum Cave and Elko series projectile points are the diagnostic artifacts of the early part of the period along with an increase in population. Locations of occupation sites shifted from the areas next to rivers and streams to desert scrub zones (Garfinkel 1976). During the latter part of this period, part of the communities lived in highly mobile groups with the majority settled at winter base camps. Caches of Elko and Humboldt Concave Base points, bifaces, and milling equipment are commonly found in archaeological deposits dating to this period (Eerkens and Spurling 2008; Faull 2007). The mobile groups had gathering camps and separate, specialized hunting camps that focused on bighorn sheep, other artiodactyls (even-toed hoofed animals such as antelope), and smaller mammals (Arnold and Walsh 2010). Sites are typically base camps with structures and associated lithic tool reduction areas. Obsidian quarrying at the Coso, Casa Diablo/Upper Eastern Sierra, and Bodie Hills sources reached its peak during this period (Eerkens and Spurling 2008; Gilreath and Hildebrandt 1997). Sites occur more in the Volcanic Tablelands and northern Owens Valley than in the southern Owens Valley area (Polson 2009).

The complexes following the Gypsum Complex are variably referred to as the Rose Springs Complex in the northern Mojave and the Saratoga Springs Complex (1,750-800 years BP) in the eastern Mojave Desert. These complexes consist of artifact assemblages that reflect a mixture of cultures that appear to have influenced the region. Saratoga Springs Period assemblages encompass a broad, diverse array of artifact types, many of which appear to come from outside the region or reflect outside influences from the Southwest. The diagnostic artifacts for the period include Eastgate and Rose Spring projectile points. These sites have well-developed middens and a variety of material culture, stone knives, drills, pipes, bone awls, both millingslab and mortar milling tools, incised stones, slate pendants, and large quantities of obsidian. The sites are found near springs, along washes, and sometimes along lakeshores (Sutton et al. 2007; Warren 1984). Other characteristic artifact types of the period include small triangular knives, scrapers, drills, hammerstones, choppers, pendants of green schist, and Pacific Coast shell ornaments, including *Olivella* saucer beads, *Olivella* barrel beads, and limpet rings (Warren 1984:367).

In the Owens Valley, the equivalent to the Rose Springs and Saratoga Springs complexes is referred to as the Haiwee Period (1,350 to 650 years BP) (Arnold and Walsh 2010). Sites dating to this period show evidence of groups who moved less frequently and occupied villages with semi-subterranean houses. The bow and arrow and plant resource storage pits were introduced at this time, while artifact caching mostly disappeared and production of stone tools at obsidian quarries declined (Eerkens and Spurling 2008; Faull 2007). The small band social organization of earlier periods appears to have been replaced by the household as the primary socioeconomic unit (Polson 2009).

The Panamint or Shoshonean Complex (800 years BP to contact) marks the appearance of speakers of Numic languages within the County, displacing previous populations of the eastern Mojave Desert. These assemblages may relate directly to the historic period Paiute (Warren 1984). The characteristic diagnostic artifacts for assemblages of the more northerly areas of the eastern Mojave Desert are Desert Side-notched projectile points and coarse, brownware ceramic types. The overall eastern Mojave assemblage strongly resembles assemblages across the northern Mojave Desert to Owens Valley and may derive from that region. Assemblages from the more southerly areas of the eastern Mojave Desert include Cottonwood Triangular projectile points, in addition to Desert Side-notched points, and the ceramic assemblage includes pottery styles representative of the Hakataya archaeological culture, a cultural unit of the Lower Colorado River and the Colorado Desert. Among the Hakataya ceramics in assemblages dating to the end of the prehistoric period and beginning of the historic period in the eastern Mojave Desert are brownwares, buffwares, and red-on-buff wares (Warren 1984; Warren and Crabtree 1986).

The period directly prior to European Contact is called the Marana Period (650 BP to contact) in the Owens Valley. The social focus towards household settlements continued from the Haiwee Period. New types of projectile points (Cottonwood and Desert Side–notched points) and the Owens Valley Brownware type of pottery were introduced (Eerkens and Spurling 2008). Intensification of small seed and green pinyon nut harvesting during this time may be linked to the development of brownware pottery, as these resources could be individually owned and would not be subject to unrestricted sharing. Pots were a critical component of the increasingly intensive harvest of small seeds, because they generally were individually made and owned and could be used within houses, allowing food preparation and consumption to occur in private (Eerkens 2003; 2004).

Ethnographic Setting

Two groups were the primary inhabitants of the County: the Owens Valley Paiute and the Western (Panamint or Koso) Shoshone. The Owens Valley Paiute occupied the Owens Valley and the surrounding uplands, and the Western Shoshone inhabited Southern Inyo County (Inyo County 2001). Other groups occupied small portions of the County, including the Southern Paiute to the east of Badwater Basin and the Kawaiisu in the southern Panamint Range and southern Death Valley area. All of these groups belonged to the Numic branch of the Uto-Aztecan language family (Golla 2011).

Modern Native American groups are either federally recognized tribes or unrecognized tribes. A federally recognized tribe can be defined as "an American Indian or Alaska Native tribal entity that is recognized as having a government-to-government relationship with the US, with the responsibilities, powers, limitations, and obligations attached to that designation, and is eligible for funding and services from the Bureau of Indian Affairs" (BIA 2014). Federally recognized tribes possess the right to self-governance and are afforded various federal benefits, services, and protections because of their unique relationship with the United States. Unrecognized tribes may operate in similar ways to federally recognized tribes, but they do not have the right to government-to-government consultation or federal assistance. There are both federally recognized tribes and unrecognized tribes with traditional territories and use areas that include portions of the County.

Ethnolinguistic Chronology

The origin of the Northern Uto-Aztecan languages is widely debated, but it is likely that they existed in the southern Sierra Nevada around 3500 years BP, with the Takic language branch initially moving south to the coasts and deserts and the Numic language branch moving northeastward, either filling a void or replacing existing speech communities (Sutton 2009). Golla (2007, 2011) proposes that the Numic languages developed somewhat more recently than the Takic language between 1500 and 2000 years ago. The time for the split between the Numic dialects has been estimated to have begun between 1000 and 800 years BP and is linked with substantial archaeological changes in the northern Mojave and Great Basin (Golla 2011).

The ethnographically recorded groups associated with the County and the boundaries between groups were not like those of modern nation states and were instead indistinct, changeable, and permeable. Contact between groups, such as trade, marriage, and conflict all affected boundaries, as did changes in environmental conditions. To understand what archaeological materials may have been left behind by these groups, it is important to know the general way that they lived and where their traditional territories are located. This section includes general cultural characteristics followed by a description of lands traditionally occupied by each group.

General Cultural Characteristics for Numic Language Speakers

Cultural characteristics similar for Numic language speakers in the Great Basin and the Mojave Desert included diagnostic point types and types of pottery made using distinct coil and scrape or paddle and anvil techniques (Bean 1978; Bean and Smith 1978a; Thomas et al. 1986). Four point types may be associated with contact-period populations in the Numic language area: Rose Spring, Eastgate, Cottonwood, and Desert Side-notched (Garfinkel and Williams 2009; Kelly and Fowler 1986; Strong 1929; Zigmond 1986).

The Western Shoshone and Owens Valley Paiute practiced both cremations and burials, while the Southern Paiute primarily practiced cremation (Busby et al. 1979; Thomas et al. 1986). The Owens Valley Paiute practiced a specialized irrigation system to grow crops while the Western Shoshone and Southern Paiute primarily lived by hunting and gathering (Bean 1978, Busby et al. 1979, Kelly and Fowler 1986; Steward 1933). Sutton et al. (2007) suggest a geographic difference for artifact types. They note that the northern Mojave Desert or the Numic language areas have a combination of Desert Side-notched and Cottonwood triangular points, brownware pottery, some buffware pottery near the Mojave River, and primarily Coso obsidian artifacts. The portions of the Mojave Desert representing Takic language areas have only Cottonwood triangular points, brownware and buffware pottery, and local obsidian artifacts. The Mojave River appears to have been a boundary between the Takic and Numic speakers (Sutton et al. 2007).

Owens Valley Paiute

The Owens Valley Paiute, also called the Eastern Mono, occupied a territory centered along the Owens River on the eastern side of the southeastern Sierra Nevada. Owens Valley Paiute territory extends north to Benton, California, and east to Fish Lake Valley, Nevada (Liljeblad and Fowler 1986; Norwood et al. 1980; Steward 1933). While most of the northern Numic groups were highly mobile hunter-gatherers, the Owens Valley Paiute were organized as small groups or family units that owned rights to land and lived most of the year in permanent villages. These village sites and camps were most concentrated along the lower reaches of major drainages west of the Owens River.

The Owens Valley was one of the most densely occupied portions of the Great Basin, containing at least 30 villages and a population of approximately 1,500 to 2,000 (Busby et al 1979). Today, five separate tribes represent the descendants of the Owens Valley Paiute. All of these tribes are members of the Owens Valley Indian Water Commission. In the 1860s, the flood of prospectors attracted by the discovery of gold and silver in the Sierra Nevada and Inyo mountains began to impact the Owens Valley Paiute way of life. The ranchers and farmers who followed often used Paiute irrigation systems and grasslands.

A harsh winter and scarce food in 1861-1862 resulted in conflicts between the Paiute and settlers. In 1863 the military intervened and forcibly removed 1,000 Paiute to San Sebastian Reservation near Fort Tejon in the mountains south of Bakersfield (NPS 2014). In subsequent years, most left Fort Tejon and returned to the Owens Valley where they lived in camps near towns and farms. They integrated farm and domestic labor with traditional food gathering, and by 1866 were indispensable to the Owens Valley's agricultural economy.

In 1912 the government set aside over 67,000 acres of reservation land, known as the Bishop Colony, in the Owens Valley. An additional reservation was established at Fort Independence in 1915. In 1932 President Hoover revoked the 67,000 acres of reserved land from the Bishop Colony and placed the lands in watershed protection status for the City of Los Angeles. In 1936, the City of Los Angeles wanted the remaining lands and the federal government traded these lands for the 875 acres that now comprise the Bishop Paiute Reservation located at the base of the Eastern Sierra Nevada Mountains (Bishop Paiute Tribe 2014). Several years later in 1939, the federal government established both the Lone Pine Reservation and the Big Pine Reservation (Meridian 2014). Currently, the Owens Valley Paiute belong to five federally recognized tribes: Lone Pine Paiute, Fort Independence Paiute, Big Pine Paiute, Utu Utu Gwaitu Paiute, and Bishop Paiute.

<u>Modern Owens Valley Paiute Tribes</u>

Lone Pine Paiute Tribe

The Lone Pine Paiute Tribe of Lone Pine, California, consists of approximately 425 tribal members and a 237-acre reservation near Lone Pine, California. The tribal government consists of a general council that holds monthly meetings. Some Lone Pine Paiute Tribal members are of Timbisha Shoshone descent. Cultural resources issues are managed through the tribal Environmental Protection Program (Gates 2012).

Fort Independence Paiute Tribe

The Fort Independence Paiute Tribe has a reservation on the site of a US Army camp. The 580-acre reservation is located near Independence, California, and was established in 1915. The Tribe consists of 136 members, roughly half of whom live on the reservation. The Tribal government, consisting of a chairman, a vice chairman, and a tribal administrator, was established in 1965. As of 2005, cultural resources issues were handled by their Tribal Historic Preservation Officer (THPO) (Fort Independence Indian Reservation 2005).

Big Pine Paiute Tribe

The Big Pine Paiute Tribe of the Owens Valley consists of approximately 403 enrolled members with a 279-acre reservation near Big Pine, California. Tribal government consists of a constitutionally established Tribal Council and a General Council. The Tribal Council holds monthly meetings; the General Council meets quarterly. At least one Big Pine Paiute Tribe family shares a tribal affiliation with the Pahrump Paiute. The Big Pine Tribe's cultural resources program is managed by a THPO (Gates 2012).

Utu Utu Gwaitu Paiute Tribe

The Utu Utu Gwaitu Paiute Tribe was previously referred to as the Benton Paiute. Tribal membership is approximately 138 people and their reservation, near Benton, California, is 162 acres in size. The tribal government consists of the Utu Utu Tribal Council, which meets monthly, and the General Council of all members, which meets annually (Gates 2012).

Paiute-Shoshone Indians

The Paiute-Shoshone Indians of the Bishop Community has an 875-acre reservation located near Bishop, California, and tribal enrollment stands at approximately 1040 members. The governing body of the tribe is the Bishop Indian Tribal Council. The Bishop Paiute Tribe's cultural resources program is maintained through a THPO (Gates 2012).

<u>Western Shoshone</u>

The Western Shoshone occupied a region that included Death, Panamint, and Saline valleys in eastern California through the highlands of central Nevada into northwestern Utah including Skull and Deep Creek valleys (Norwood et al. 1980, Thomas et al. 1986). Within the County, the Western Shoshone people resided in a swath of land between the Owens Valley Paiute and the Southern Paiute territories. Their western-most boundaries are in the Coso Mountains and the eastern slope of the Inyo Mountains.

Today, Western Shoshone in California and western Nevada are part of the Timbisha Shoshone Tribe**,** a federally recognized tribe. It currently has approximately 306 tribal members and occupies a 7,914-acre reservation, comprised of several parcels in and around Death Valley National Park, including a 314-acre parcel near Furnace Creek, California. Some reservation parcels are located in Nevada near Uda, Scotty's Junction, and Death Valley Junction. The tribe also has several areas that are co-managed with the NPS or BLM. The tribe's main office is in Bishop, California. The tribe was originally represented in the 1863 treaty of Ruby Valley. However, that treaty did not result in any specific representation for the Timbisha Shoshone, who fought for and eventually achieved federal recognition in 1983. However, the tribe did not receive a land base until 2000 with the passage of the Timbisha Homeland Act. The tribe holds general elections; it is led by a chairperson and holds monthly meetings. A THPO manages the tribe's cultural programs (Gates 2012).

Southern Paiute

The Southern Paiute represent a population of people who were the traditional inhabitants of a territory ranging from the northeastern Mojave Desert through southern Nevada into southwestern Utah and northwestern Arizona to the north of the Colorado River. The Pahrump and Las Vegas bands are the two most southwestern groups of Southern Paiute, except for the Chemehuevi (Gates 2012).

Modern Southern Paiute Tribes

Pahrump Paiute Tribe

The Pahrump Paiute Tribe, located in Pahrump, Nevada, is not a federally recognized tribe, but is recognized as an established tribal entity by California and is often consulted by federal land managing agencies that operate within their traditional territory. The tribe currently consists of approximately 100 tribal members. The tribe is led by a chairperson and is based in Pahrump, Nevada. While the Pahrump Paiute Tribe has no reservation, they do assert an ancestral territory that includes the southeastern portion of the County and the northeastern corner of San Bernardino County, as well as the adjacent portion of Nevada. The primary focuses of the tribe are to maintain their unique cultural identity, to protect important cultural resources that are could be affected by various projects, and to attain federal recognition (Gates 2012).

Las Vegas Tribe of Paiute Indians

The Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony is a federally recognized tribe. It consists of approximately 71 enrolled members with a 3,800-acre reservation generally referred to as “Snow Mountain,” located several miles north of Las Vegas. The Pahrump Paiute and Las Vegas Paiute are closely related to one another and to some of the Moapa Tribe membership. Isabel Kelly identified both Pahrump and Las Vegas under the Las Vegas Paiute Tribe; however, each tribe has continuously maintained their distinct identities and function independently. The tribe’s original reservation was a 10-acre plot of land located in downtown Las Vegas and deeded to the tribe in 1911 by a private ranch owner. The 10-acre plot is still part of the reservation. The tribe has a constitution adopted in 1970, and is governed by a tribal council. The tribe has several businesses, including an extensive golf resort, gas station, and two smoke shops. Recent issues that involve the Tribe concern on-going desecration of tribal cultural sites, including graffiti of sacred sites in the Red Rock area, a popular tourist destination for visitors to Las Vegas. Cultural resources issues are dealt with by the tribal Environmental Protection Office (Gates 2012).

Kawaiisu

The Kawaiisu, or “Nuwa,” occupied the southern end of the Sierra Nevada watershed by the Piute and Tehachapi mountains at the line between the Great Basin and California cultures. The eastern portion of their territory ranged into the southern Panamint and Death Valleys in the County. The habitat was in the mountainous ridge between the Mojave Desert and the San Joaquin Valley. One source suggests that there were Mountain Kawaiisu who lived in the Piute and Tehachapi mountains in Kern County and Desert Kawaiisu who lived east of Tehachapi into southern Death and Panamint valleys where they sometimes lived with Shoshone groups (Garfinkel and Williams 2009).

Relocation by the United States government in the late 1800s resulted in the loss of much of the Kawaiisu traditional dress, music, language, and knowledge of traditional practices. In the early 2000s, there were only five native speakers remaining and few tribal members who had retained knowledge of the tribe's traditions. In response to this, in 2002 tribal members came together to form the Kawaiisu Language and Cultural Center. In 2007, the Center became a nonprofit organization and formed an 11-member board of directors. The Center provides for Kawaiisu tribal members and members of other tribes with tools for teaching traditional language and culture (Kawaiisu Language and Cultural Center 2014; Lawrence 2009). Currently, the Kawaiisu number around 250 and are a non-federally recognized Indian tribe (Kawaiisu Language and Cultural Center 2014). An additional Kawaiisu organization is the Kawaiisu Tribe of the Tejon Indian Reservation. This is also not a federally recognized tribe. Members are represented by a five-member tribal council (Kawaiisu Tribe of the Tejon Indian Reservation 2014).

Historic Setting

The initial European colonization of the Inyo County area began with the Euro-American fur trappers who began to work the County region in increasing numbers in the early 1800s (Malouf and Findlay 1986). While earlier trapping expeditions had passed through, the first recorded exploration of the rest of the County was in 1834 by Joseph Reddeford Walker. He entered the Owens Valley while leading the Chiles emigrant party into California. Settlement in the County was driven primarily by exploration and development of mineral resources, including gold, silver, borax, tungsten, and soda ash. As mining developed outside the County, demand for supplies brought cattle ranching to the Owens Valley. The County was organized in 1866 from land that had been set aside from Mono and Tulare Counties. The County was originally named Coso County, with Independence designated as the County seat (Inyo County 2001).

Mining

The County has a rich mining history. The Anglo-American settlement of the Inyo County area began with the establishment of gold and silver mines. The early strikes were focused on silver in Owens and Panamint valleys in the late 1850s and early 1860s (NPS 2003). Some of the earliest mining claims were established in 1859 in the Potosi Mining District near Lone Pine (Chalfant 1922). Numerous silver mines were also established during the early 1860s in the Coso Range, resulting in the establishment of the Coso Mining Company and the Coso Gold and Silver Mining Company, among others (Norwood et al. 1980). Mining success fluctuated greatly in these areas. A third mining area was established in 1865 in the Inyo Range on the southeast side of the Owens Valley, centered at Cerro Gordo. This area was very productive, and by 1868 the Union Mine at Cerro Gordo was the most productive silver mine in the US (Norwood et al. 1980).

In addition to gold and silver, salt was mined in the Saline Valley east of Independence. Salt mining began in 1864, but transportation costs kept the enterprise from growing to a major operation (Norwood et al. 1980). The Saline Valley Salt Company constructed the Saline Valley

Salt Tram between 1911 and 1913 to transport salt over the Inyo Mountains to Owens Valley where it was then shipped via railroad (Ver Planck 1957). It was the steepest tram in the US rising from 1,100 feet in the Saline Valley to 8,500 feet at the crest of the Inyo Mountains, and then dropping to 3,600 feet in Owens Valley. The tram is on the NRHP (No. 74000514) (Conrad 1973). Salt mining by various companies continued on and off until 1930 when the Sierra Salt Company closed (Ver Planck 1957)

Mining in the Death Valley-Furnace Creek area was slow to develop due to transportation difficulties. The Telescope Mining District, organized in 1860, was located just west of Death Valley on a spur of the Panamint Range. Worked only marginally in the beginning, by the late 1860s a substantial mining district had developed (Greene 1981). Mormon immigrants traveling west discovered gold in 1854 and 1856 in the Amargosa River area (Norwood et al. 1980). Silver was found in the Panamint Range in 1858, and the area was worked with limited success in the 1860s. Beginning in the 1880s a revival of gold mining in the Panamint Mountains occurred, centered in the Tuber Canyon area (Greene 1981). The towns of Ballarat and Garlock developed as a result of the mining industry in the Panamints.

The discovery of borax in Death Valley in 1881 lead to the development of this previously sparsely populated portion of the County. One of the most successful mining operations in the area during the late 1800s was the Harmony Borax Works. In 1881, William T. Coleman formed the Greenland Salt and Borax Mining Company, which began operating the Harmony Borax works north of Furnace Creek in 1882 (Caltrans 2008, Greene 1981). The operation mined borate that formed on the surface of the salt flats, called "cottonballs."

Coleman also ran another borate mining operation, the Amargosa Borax Works, near Resting Springs. The Amargosa Borax Works operated during the summer months when work in the valley was suspended because of extreme heat (Greene 1981). It was from the Amargosa works that the famous 20-mule teams hauled the borate to the Daggett railhead, a 330-mile round trip (Zentner 2012). In 1883 a richer type of borate, occurring underground, was discovered south of Furnace Creek and subsequently southwest of Death Valley Junction. In 1890 Francis M. Smith acquired the borate mines in Death and Amargosa valleys, Furnace Creek, and Borate, consolidating them all under the Pacific Coast Borax Company (Caltrans 2008). Smith closed down all the works except the Borate works, which could be worked most profitably (Greene 1981). Borate became the main producer of borax and boric acid in the US between 1890 and 1907.

Tungsten mining became an important industry in Owens Valley that developed in the first decades of the 20th century. First discovered in 1913 in the Tungsten Hills west of the town of Bishop, tungsten mining took off with the construction of two mills in Round Valley in 1916. This industry remained economically important until the price of tungsten collapsed following World War I. At the end of the Great Depression into World War II, the prices rebounded and tungsten mining remained important in the area around Bishop until the end of the 20th century when mining effectively ceased (Meridian 2014).

Agriculture

Indigenous agriculture had existed in the Owens Valley well before the Spanish arrived, but the County did not become a site of historic period agriculture until farmers and cattlemen moved into the area to supply food to the mining operations in the area around the Owens and Panamint valleys. Although the area received little rain, the Owens River supplied enough dependable water for irrigation. The arrival of larger numbers of Americans into the area resulted in conflicts with the indigenous Native American groups (Norwood et al. 1980). As cattleman and ranchers moved into Owens Valley and cattle grazed on the Paiute food supply, the Paiute stole and killed cattle for food. The ranchers armed themselves and violence between the Native Americans and whites escalated into the conflict that became known as the Owens Valley Indian War (1861-1865). The ranchers asked for the help of the military in Los Angeles and Fort Tejon. In 1862, the Army established Camp Independence in Owens Valley to put an end to the violence. More than 1,000 Paiute were forced into San Sebastian Indian reservation at Fort Tejon in 1863 (California State Military Museum 2013a). Temporarily abandoned in 1864, the camp was re-occupied in 1865 after violence again broke out, and remained active until abandoned in March 1877 (California State Military Museum 2011b).

By the beginning of the 20th century, the City of Los Angeles was experiencing a severe water shortage and it was proposed to William Mulholland, president of the Los Angeles Water Department, that the Owens River be tapped to supply Los Angeles with water (Norwood et al. 1980). Los Angeles voters approved a $23 million bond, water rights were purchased, and an aqueduct was completed by 1913. The diversion of water to Los Angeles did not immediately impact agriculture in the Owens Valley, but a drought in 1921-1922 began a decline that ended farming in the area by the mid-1930s (Norwood et al. 1980).

Transportation

An early important route for trade and travel into California was the Old Spanish Trail, pioneered as a trade route between New Mexico and California by Antonio Armijo in 1829 (Beck and Haase 1974). The Old Spanish Trail began in Santa Fe, New Mexico, and ended at the Pacific Ocean at the Pueblo of Los Angeles. This passed through the eastern portion of the County as it passed from Las Vegas or Jean in Nevada and headed west before turning south at Tecopa (NPS 2001).

Numerous small railroads were constructed into the County for the express purpose of servicing mining operations. The Carson and Colorado Railroad, incorporated in 1880, and ran from Mound House, Nevada, to Keeler, California, below the Cerro Gordo Mines on the east side of Owens Valley. Much of the route paralleled US 395. The Southern Pacific Company bought the line in 1900, renamed it the Nevada and California Railway in 1905, and in 1912 was renamed again the Southern Pacific. Portions of the railway lines closed in the 1930s and 1940s. The final portion from Laws to Keeler was abandoned in 1960 and the rails were removed in 1961 (Turner 1965).

The Tonopah & Tidewater Railroad, constructed between 1905 and 1907, was a 170-mile rail line that ran from Ludlow, California, to Beatty, Nevada. The line went through Death Valley Junction, where borax from the borax mines in Death Valley was loaded onto railcars for shipment. Both cargo and passenger trains operated on the line. The Pacific Coast Borax Company began shutting down operations in Death Valley in 1928, dealing a substantial blow to the revenue of the railroad. The line continued to run reduced operations for several years afterword, but finally closed down in June 1940 (Jennings and Wyant 1976).

A trail likely ran through Owens Valley into Mono County to the north since prehistoric times, but in the historic period it became commonly used by prospectors passing through the area to the California gold fields and Comstock Lode. This trail became a road by at least the 1860s when ranchers began driving cattle into the high Sierra Nevada to supply the mining boomtown of Aurora. This road, eventually called El Camino Sierra, ultimately ran from Los Angeles in the south to Lake Tahoe in the north. Initially used to move materials to and from mines and mining communities, by the early 20th century, El Camino Sierra was marketed as a scenic route for people in the newly available automobile. By 1931, the paving of El Camino Sierra was complete. Today, much of this route in the County is occupied by US 395 (Di Pol 2012).

Military

In 1862, the 2nd California Cavalry established Camp Independence as a post on the north side of Oak Creek, about three miles from the town of Independence, in the Owens River Valley. Lieutenant Colonel George S. Evans was sent there to end violence between the area's miners and the Native American population. Temporarily abandoned in 1864, it was reoccupied in March 1865 when violence broke out again. The post was finally abandoned on July 5, 1877. The military reservation was transferred to the Interior Department for disposition on July 22, 1884. The building which served as the commanding officer's quarters was moved from its original site to its new setting on Edwards Street in Independence. In 1915, the former military reservation was established as the Fort Independence Indian Reservation (California State Military Museum 2011b).

China Lake NAWS, originally called Naval Ordinance Test Station Inyokern, was established in 1943 for the California Institute of Technology to conduct research into rockets and rocket propellants (Mikesell 2000). China Lake NAWS continued after World War II with development and testing of guided missiles, jet aircraft ejection systems, and later space program capsules and the intercontinental ballistic missile development program (Mikesell 2000). China Lake NAWS is the Navy's largest single land holding at 19,600 square miles and continues as their center for research, testing, and evaluation of weapons systems.

Manzanar Relocation Center

With the outbreak of World War II, the federal government gave the US Army the authority to forcibly relocate between 110,000 and 120,000 Japanese Americans to 10 internment camps away from the Pacific Coast. The Manzanar Relocation Center was established in 1942 as the first of these camps and held over 10,000 incarcerated Japanese Americans, 90 percent of whom were from the Los Angeles area. The camp consisted of one-story barracks with common bathrooms, showers, laundries, and mess halls. It was closed in 1945 at the end of World War II; it is the best preserved internment camp (Thompson 1984). The Manzanar Relocation Center is listed on the NRHP (No. 76000484) and is designated a National Historic Landmark (No. 850) and a National Historic Site (N432).

Known Resources and Resource Sensitive Areas

The programmatic nature of this PEIR precludes performing a record search for cultural resources at the Eastern Information Center of the California Historical Resources Information System. Instead, a variety of publically available datasets were consulted to identify known resources and areas that are sensitive for cultural resources. These include the California Office of Historic Preservation (OHP) Listed Resources for the County (OHP 2014), the CDCA plan document (BLM 1980), and the Hidden Hills Final Staff Assessment (CEC 2012).

Table 4.5-1 details the cultural resources that are listed by the OHP as being in the County, as well as their location, date listed, and type.

Table 4.5-1
STATE OFFICE OF HISTORIC PRESERVATION LISTED RESOURCES IN INYO COUNTY

Resource Name	OHP Listing Number	Type	Date Listed	Location
Archeological Site Ca-Iny-134	(N2194)	National Register Property	3/12/2003	Olancha
Bennett-Arcane Long Camp	(444)	State Historical Landmark	10/24/1949	Unincorporated Inyo County
Birthplace of Horace Marden Albright	(P586)	Point of Interest	3/1/1982	Bishop
Bishop Creek Battleground	(811)	State Historical Landmark	10/30/1965	Bishop
Burned Wagons Point	(441)	State Historical Landmark	10/24/1949	Stovepipe Wells
Camp Independence (Fort)	(349)	State Historical Landmark	10/9/1939	Independence
Cardinal Gold Mine	(P443)	Point of Interest	10/1/1975	Bishop
Cartago Boat Landing	(P551)	Point of Interest	6/6/1980	Cartago
Cerro Gordo	(P587)	Point of Interest	3/1/1982	Keeler
Coso Hot Springs	(N550)	National Register Property	1/3/1978	Little Lake

Table 4.5-1 (cont.)
STATE OFFICE OF HISTORIC PRESERVATION LISTED RESOURCES IN INYO COUNTY

Resource Name	OHP Listing Number	Type	Date Listed	Location
Coso Rock Art District	(N2069)	National Register Property	10/8/1999	China Lake
Cottonwood Charcoal Kilns	(537)	State Historical Landmark	9/14/1955	Cartago
Darwin	(P577)	Point of Interest	12/21/1981	Darwin
Death Valley Gateway	(442)	State Historical Landmark	10/24/1949	Furnace Creek
Death Valley Junction Historic District	(N935)	National Register Property	12/10/1980	Death Valley Junction
Death Valley Scotty Historic District	(N645)	National Register Property	7/20/1978	Olancha
Eagle Borax Works	(N320)	National Register Property	12/31/1974	Furnace Creek
Eichbaum Toll Road	(848)	State Historical Landmark	5/19/1971	Stovepipe Wells
Farley's Olancha Mill Site	(796)	State Historical Landmark	9/16/1964	Olancha
First Permanent White Habitation in Owens Valley	(230)	State Historical Landmark	6/20/1935	Bishop
Fossil Falls Archeological District	(N888)	National Register Property	7/9/1980	Little Lake
Furnace of the Owens Lake Silver-Lead Company	(752)	State Historical Landmark	12/22/1960	Keeler
Grave Of 1872 Earthquake Victims	(507)	State Historical Landmark	7/31/1953	Lone Pine

Table 4.5-1 (cont.)
STATE OFFICE OF HISTORIC PRESERVATION LISTED RESOURCES IN INYO COUNTY

Resource Name	OHP Listing Number	Type	Date Listed	Location
Harmony Borax Works	(N321)	National Register Property	12/31/1974	Stovepipe Wells
Inyo County Courthouse	(N2006)	National Register Property	1/23/1998	Independence
Keeler, End of the Line	(P444)	Point of Interest	10/1/1975	Keeler
Laws	(P441)	Point of Interest	10/1/1975	Bishop
Laws Narrow Gauge Railroad Historic District	(N974)	National Register Property	10/1/1981	Bishop
Laws Narrow Gauge Railroad Station and Yard	(953)	State Historical Landmark	1/14/1983	Bishop
Leadfield	(N370)	National Register Property	6/10/1975	Death Valley
Manzanar Relocation Center	(850)	State Historical Landmark	1/20/1972	Lone Pine
Manzanar War Relocation Center, National Historic Site	(N432)	National Register Property	7/30/1976	Independence
Mary Austin's Home	(229)	State Historical Landmark	6/20/1935	Independence
Mayfield Canyon Battleground	(211)	State Historical Landmark	6/20/1935	Bishop
Old Harmony Borax Works	(773)	State Historical Landmark	8/16/1962	Furnace Creek
Old Stovepipe Wells	(826)	State Historical Landmark	8/7/1968	Stovepipe Wells
Owensville	(P511)	Point of Historical Interest	10/14/1977	Bishop

Table 4.5-1 (cont.)
STATE OFFICE OF HISTORIC PRESERVATION LISTED RESOURCES IN INYO COUNTY

Resource Name	OHP Listing Number	Type	Date Listed	Location
Pawona Witu	(N390)	National Register Property	10/14/1975	Bishop
Reilly	(N2221)	National Register Property	1/2/2004	Trona
Saline Valley Salt Tram Historic Structure	(N322)	National Register Property	12/31/1974	Keeler
San Francis Ranch	(208)	State Historical Landmark	6/20/1935	Bishop
Site Of Bend City	(209)	State Historical Landmark	6/20/1935	Independence
Site Of Putnam’s Cabin	(223)	State Historical Landmark	6/20/1935	Independence
Skidoo	(N280)	National Register Property	4/16/1974	Death Valley
Valley Wells	(443)	State Historical Landmark	10/24/1949	Trona
Westguard Pass-Toll Road	(P442)	Point of Interest	10/1/1975	Big Pine

Source: OHP 2014
OHP = State Office of Historic Properties

A large portion of eastern Inyo County is within the CDCA planning area. The CDCA is a 25-million acre expanse of land in southern California designated by Congress in 1976 through the FLPMA, much of which is managed by the BLM. In 1980, the BLM completed the CDCA Plan, part of which designated areas that were identified as especially sensitive for cultural resources or Native American values as ACEC. These ACECs are part of a conservation program wherein the BLM can designate areas that need special management due to the presence of important river and stream corridors, threatened and endangered species habitats, cultural and archaeological resources, and unique scenic landscapes.

Five ACECs were designated in the County for values involving cultural and archaeological resources: Saline Valley/Salt Lake/Hunter Canyon, Darwin Falls, Panamint Valley, Panamint City, and Greenwater Canyon (BLM 1980b). Two of these, Saline Valley/Salt Lake/Hunter Canyon and Greenwater Canyon, are also of critical concern due to their importance to Native American cultural practices, such as religious ceremonies and resource gathering (BLM 1980c). It is important to note that the CDCA does not include portion of the County west of the Inyo Mountains and north of Owens Lake, so information on the cultural resource and Native American values sensitivity of this area, including the Laws SEDA, is not readily available (BLM 1980a).

Besides designating ACECs, the BLM also mapped areas that were not of critical concern, but were sensitive for culture resources and Native American religious and secular use. One of the culture resource sensitive areas is located to the southeast of Owens Lake, likely within the Owens Valley SEDA. Another is near the southern edge of the County on the west side of US 395, and may be within the Pearsonville SEDA. The Chicago Valley SEDA is also an area identified as sensitive for cultural resources (BLM 1980).

The extensive ethnographic research performed during the CDCA planning involved identifying areas of cultural importance to Native American groups. These areas are referred to as Native American Elements. Within the portion of the County within the CDCA, the upland areas are predominantly in Native American Elements, including the Inyo, Coso, Eastern Sierra, Panamint, Funeral, Chance, and Grapevine mountains. The Owens Valley, Rose Valley, and Pearsonville SEDAs may overlap portions of these sensitive areas (BLM 1980).

In 2012, the CEC performed cultural resource and ethnographic research for the assessment of environmental impacts of the Hidden Hills Solar Project. This large, focused solar tower power plant was planned to be built in eastern portion of the County, in the eastern portion of the Charleston View SEDA. CEC research identified a series of important cultural resources landscapes in the surrounding vicinity. These included the Pahrump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape and the Old Spanish Trail–Mormon Road Northern Corridor, as well as three ethnographic landscapes: the Salt Song Landscape, the Pahrump Paiute Home Landscape, and the Ma-hav Landscape. The Pahrump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape spans the California Nevada Border within the Charleston View SEDA and represents the aboriginal use of a locally significant ecological zone over probably at least the last 12,000 years. The Old Spanish Trail–Mormon Road Northern Corridor consists of trail routes that were travelled by Spanish traders, American trappers and settlers, and Mormon pioneers in the first half of the nineteenth century. The Northern Corridor is located to the north of the Old Spanish Trail Highway (CEC 2012).

The Pahrump Paiute Home Landscape is centered on the Spring Mountains. It consists of numerous component landscape areas with multiple contributing attributes, which include the Ma-hav Landscape and the Salt Song Trail. The Ma-hav Landscape is an area of approximately 35 square miles that specifically refers to several springs and an intermittent set of creeks that flow from the flanks of Mount Charleston through a mesquite coppice dune zone and includes the valley floor and the edge of a dry lake bed. It is important for prehistoric period, historic period, and ethnographic cultural resources (Gates 2012).

The Salt Song Trail is a Southern Paiute sacred trail corridor that crossed the southeastern portion of the County as it makes a circuit between the Mojave Desert and the southern portion of the Wasatch Range, passing through Utah, Nevada, California, and Arizona. The trail is believed to be traveled by the deceased, with the aid of traditional practitioners who, through song, story, and prayer, usher the deceased along the path on their post-burial journey to the afterlife. The trail consists of physical marks on the land, both trail marks and natural land patterns, wayside locations where specific songs and other ceremonies are sung or conducted, and a corridor along the trail system (Musser-Lopez and Miller 2010).

4.5.1.2 Paleontology Setting

Buried potential paleontological fossils are normally underground, out of sight, and not easy to locate other than by direct observation after erosion or during excavation. The likelihood of encountering subsurface paleontological resources in Inyo County SEDAs is not well known. The land consists of mostly flat-lying sediments, thus natural erosion cuts through the sediments but does not penetrate deeply except in major stream channels, so the prior existence of subsurface and at-depth fossils is not readily determinable. Paleontology studies have focused on natural erosion in hills and badlands where fossil exposures may be abundant in arroyo cuts and rain-washed hillsides.

Past and present discretionary projects proposed within Inyo County and the California desert as a whole have required varying degrees of baseline information on paleontological resources to be collected to support the analysis of paleontological resource impacts for specific projects, as required under CEQA and/or NEPA. Site-specific mapping of fossil yield potential, as well as implementation of mitigation programs, where determined to be necessary, has generated important knowledge about the presence, distribution, and importance of fossil resources. However, such information is generally scarce, localized, and specific to individual geologic formations. In addition, mitigation reports of previously monitored developments are frequently not widely available to the general public.

Over at least the last 700,000 years (Middle Pleistocene to Recent), warm-desert environments typical of the present have been the exception rather than the rule (CEC 2012). Because of this, the Inyo County region has been occupied by steppe shrubs and coniferous woodlands rather than desert scrub. During glacial periods, runoff into valleys formed lakes and pond and marsh environments (CEC 2012). The valley bottom riparian habitats attracted now-extinct Pleistocene megafauna and their remains can be found in some ancient lake (lacustrine) and paleospring sediments (CEC 2012). Both lacustrine sediments and paleospring deposits can result in fossils. The faunal assemblage fossils most often discovered in these deposits are primarily the grazing members of the extinct Pleistocene megafauna including mammoth (*Mammuthus columbi*), camel (*Camelops hesternus*), at least two species of horse (*Equus* spp.), and giant llama (*Hemiauchenia* sp.) (CEC 2012). The entire Mojave Desert region, including Inyo County, has high/very high, moderate/unknown, and low/very low fossil yield potential (CEC 2012).

4.5.1.3 Regulatory Framework

Numerous laws, ordinances, regulations, and standards on state, federal, and local levels seek to protect and target the management of cultural resources. The lack of a federal nexus governing this PEIR means that California state law will be the primary regulatory framework referenced. However, as this document is programmatic in nature, the most important federal cultural resources regulations are mentioned to guide future activity. Specific renewable projects proposed in the future would also be required to comply with any applicable federal and state regulations. Applicable regulations are summarized and briefly discussed below.

Federal Regulations

Federal protections for scientifically significant cultural resources include NEPA of 1969, the Antiquities Act of 1906, the Archaeological Resources Protection Act of 1979, the National Historic Preservation Act of 1969 (NHPA), the Federal-Aid Highway Act of 1935, the FLPMA of 1976, and CFR Title 43, among others.

State Regulations

<u>California Environmental Quality Act (Public Resources Code Section 21000 et seq.) (1970)</u>

Historical and archaeological resources are afforded consideration and protection by CEQA (14 CCR Section 21083.2, 14 CCR Section 15064). The State CEQA Guidelines define significant cultural resources under two regulatory designations: historical resources and unique archaeological resources.

An *historical resource* is defined as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register for Historic Resources (CRHR)"; or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the [PRC]"; or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record" (14 CCR Section 15064.5[a][3]). While Traditional Cultural Property (TCP) and cultural landscapes are not directly called out in the state definitions of historical resources, TCPs are places and cultural landscapes are areas, and places and areas are included as types of historical resources. Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historical Place (NRHP) and California Registered Historical Landmarks from No. 770 onward (PRC 5024.1[d]). Locally listed resources are entitled to a presumption of significance unless a preponderance of evidence in the record indicates otherwise.

Under CEQA, a resource is generally considered historically significant if it meets the criteria for listing in the CRHR. A resource must meet at least one of the following four criteria (PRC 5024.1; 14 CCR Section 15064.5[a][3]):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. Title 14, CCR Section 4852(b)(1) adds "is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States."

2. Is associated with the lives of persons important in our past. Title 14, CCR Section 4852(b)(2) adds, "is associated with the lives of persons important to local, California, or national history."

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Title 14, CCR 4852(b)(3) allows a resource to be CRHR eligible if it represents the work of a master.

4. Has yielded, or may be likely to yield, information important in prehistory or history. Title 14, CCR 4852(b)(4) specifies that importance in prehistory or history can be defined at the scale of "the local area, California, or the nation."

Historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (14 CCR 4852[c]).

An archaeological artifact, object, or site can meet CEQA's definition of a unique archaeological resource, even if it does not qualify as a historical resource (14 CCR 15064.5[c][3]). An archaeological artifact, object, or site is considered a unique archaeological resource if "it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria (PRC 21083.2[g]):

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

- Has a special and particular quality such as being the oldest of its type or the best available example of its type.

- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Within California state law, cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. All resources nominated for listing in the CRHR must have integrity; the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Therefore, resources must retain enough of their historical character or appearance to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and/or association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination (Calif. PRC § 5024.1).

<u>State CEQA Guidelines, California Code of Regulations Title 14, Section 15064.5</u>

When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). A project proponent may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans identified as the most likely descendant by the NAHC.

<u>Discoveries of Human Remains under California Environmental Quality Act Public Law</u>

California law sets forth special rules that apply where *human remains* are encountered during project construction. These rules are set forth in one place in State CEQA Guidelines, Section 15064.5[e] as follows:

> In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
>
> 1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
>
>   a. The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required (as required under California Health and Safety Code Section 7050.5).
>
>   b. If the coroner determines the remains to be Native American:
>
>   i. The coroner shall contact the [NAHC] within 24 hours.
>
>   ii. The [NAHC] shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
>
>   iii. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods (as provided in [PRC] Section 5097.98), or
>
> 2. Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
>
>   a. The [NAHC] is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
>
>   b. The descendant identified fails to make a recommendation; or
>
>   c. The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the [NAHC] fails to provide measures acceptable to the landowner.

California Public Records Act (Government Code §§ 6250 through 6276.48) (1968)

This act requires disclosure or inspection of government documents by the public. Section 6254.10 of this act provides for the nondisclosure of records relating to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the SLC, the NAHC, including records obtained through consultation with Native American tribes and a state or local agency (California Public Records Act Section 6254.10, et seq.).

Public Resources Code, Section 5024 et seq.

PRC Section 5024 requires that each state agency develop policies for the preservation and maintenance of all state-owned historical resources under its jurisdiction listed in or potentially eligible for inclusion in the NRHP or registered or eligible for registration as a state historical landmark. Each state agency is required to submit updates to their an inventory of all state-owned structures over 50 years of age under its jurisdiction listed in or which may be eligible for inclusion in the NRHP or registered or which may be eligible for registration as a state historical landmark. These inventories are used to create a master list maintained by the OHP. The State Historic Preservation Officer (SHPO) is supposed to be consulted by state agencies if any action would alter or affect any resources on this master list (PRC Section 5024.1). Additionally, Section 5024.1 establishes the CRHR as an authoritative guide for identifying which cultural resources are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR eligibility criteria provide one of the bases for determining a cultural resource to be significant under CEQA.

Public Resources Code, Section 5097.9 et seq. (1982)

PRC Section 5097.9 establishes that both public agencies and private entities using, occupying or operating on state property under public permit, shall not interfere with the free expression or exercise of Native American religion and shall not cause severe or irreparable damage to Native American sacred sites, except under special, determined circumstances of public interest and necessity. This section also creates the Governor-appointed nine member NAHC, charged with identifying and cataloging places of special religious or social significance to Native Americans, identifying and cataloging known graves and cemeteries on private lands, and performing other duties regarding the preservation and accessibility of sacred sites and burials and the disposition of Native American human remains and burial items.

Under PRC Section 5097.5, all state and local agencies must cooperate with the NAHC by providing copies of appropriate sections of all CEQA environmental impact reports relating to property of special significance to Native Americans. The NAHC is required to investigate the effect of proposed actions by a public agency if these actions may either cause severe or irreparable damage to a Native American sacred site located on state property or inhibit access to that site.

The NAHC is authorized to recommend mitigation measures if it finds, after a public hearing, that a proposed action would result in that damage or interference and to request action from the Attorney General if these mitigation measures are not addressed. This section also includes requirements for landowners to limit further development activity on property where Native American human remains are found until that landowner confers with NAHC-identified most likely descendants to consider treatment options. It further enables those descendants, within 48 hours of notification by the NAHC, to inspect the discovery site and recommend to the landowner or the person responsible for the excavation the means to treat or dispose of the human remains and any associate grave goods with dignity. In the absence of a most likely descendant, or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location that will not be disturbed. Finally, this section makes it a felony to remove Native American artifacts or human remains from a Native American grave or cairn, as well as to acquire, possess, sell, or dissect Native American remains, funerary objects, or artifacts from a Native American grave or cairn and establishes the repatriation of these remains, funerary objects, and associated grave artifacts as state policy (PRC Section 5097.9, et seq.).

<u>California Health and Safety Code Section 8010-8011: California Native American Graves Protection and Repatriation Act (2001)</u>

This section establishes a state policy that is partially consistent with the federal Native American Graves Protection and Repatriation Act. It attempts to ensure that all Native American human remains and cultural items are treated with dignity and respect. It encourages the voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California, and requires that the state provide, to tribes, the mechanisms necessary to file and follow up with repatriation claims (California Health and Safety Code Section 8010 8011, et seq.).

<u>California Senate Bill 18 (California Government Code, Section 65352.3)</u>

Pursuant to Senate Bill 18, local governments are required to consult with California Native American tribes identified by the NAHC for the purpose of protecting and/or mitigating impacts to cultural places. Senate Bill 18 requires formal consultation with Native American tribes as part of a project that enacts or amends a general plan or a specific plan.

<u>California Government Code Sections 65560 and 65562.5: Consultation with Native Americans on Open Space (2005)</u>

This section identifies the protection of Native American cultural places as acceptable designations of open space. It further requires local governments to conduct meaningful consultation with California Native American tribes on the contact lists maintained by the NAHC for purposes of protecting cultural places located on open space (California Government Code Section 65560, 65562.5, et seq.).

Local Regulations

<u>Inyo County Code</u>

Chapter 9.52 of the ICC covers the disturbance of archaeological, paleontological, and historical features. Under ICC Chapter 9.52, the excavation or exploration for archaeological, educational, or artifact collection purposes of any Native California Indian burial site is prohibited.

Additionally, when archaeological or historical evidence indicates that a site was set aside for a Native California Indian burial site, all plans for a project that may cause disturbance must be submitted to the Big Pine Paiute Tribe of the Owens Valley, the Bishop Paiute, the Death Valley Timbisha Shoshone Tribe, the Fort Independence Indian Community of Paiute Indians, the Lone Pine Paiute-Shoshone Tribe, the Owens Valley-Paiute-Shoshone Band, or other representatives for review and comment.

In the event that a Native California Indian burial site is discovered in the course of a project development, the person responsible for the project must notify the County planning commission and interested California Native Indians in the County. The planning commission will weigh the archaeological, paleontological, or historical value of the burial site against the economic detriment to the project; based on the outcome, either the project or the burial site may be relocated.

Inyo County General Plan

Cultural resources are addressed within the Conservation/Open Space Element of the Inyo County General Plan. Section 8.7, Cultural Resources, of the Conservation/Open Space Element contains the following goals and policies to protect cultural resources within the County:

- Goal CUL-1: Preserve and promote the historic and prehistoric cultural heritage of the county.
- Policy CUL-1.1: Partnerships in Cultural Programs. Encourage and promote private programs and public/private partnerships that express the cultural heritage of the area.
- Policy CUL-1.2: Interpretive Opportunities. Support and promote the development of interpretive facilities that highlight the county's cultural resources.
- Policy CUL-1.3: Protection of Cultural Resources. Preserve and protect key resources that have contributed to the social, political, and economic history and prehistory of the area, unless overriding circumstances are warranted.
- Policy CUL-1.4: Regulatory Compliance. Development and/or demolition proposals shall be reviewed in accordance with the requirements of CEQA and the National Historic Preservation Act.
- Policy CUL-1.5: Native American Consultation. The County and private organizations shall work with appropriate Native American groups when potential Native American resources could be affected by development proposals.

4.5.2 Significance Thresholds

The following significance criteria are derived from Appendix G of the State CEQA Guidelines and PRC Section 21083.2. Any proposed solar development activity would result in a significant impact related to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5 and PRC Section 21083.2.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5 and PRC Section 21083.2.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries (State CEQA Guidelines Section 15064.5[d]).

4.5.3 Impact Analysis

The REGPA works to minimize impacts to cultural resources by constraining renewable energy development within the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact cultural resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to cultural resources against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the project-specific cultural resources analysis conducted for the project.

In order to identify impacts, the analysis considers the significance of the cultural resources as well as the sensitivity of the SEDAs. Sensitivity is qualitative in nature because no project-specific studies have been done to identify numbers of cultural resources. Likewise, the impacts discussed in this section are general to the construction of solar energy facilities and do not take into account any specific impacts that would be identified on a project-specific basis.

4.5.3.1 Cultural Resources Categories

Four broad types of resources are considered here: prehistoric archaeological resources, historic period archaeological resources, built-environmental resources, and ethnographic resources.

Prehistoric Archaeological Resources

Prehistoric archaeological resources are places that Native Americans lived, performed activities, altered the environment, and created art before substantial contact with Europeans and Euro-Americans began in the mid-nineteenth century in the County. Prehistoric resources contain features left behind by these activities as well as artifacts and subsistence remains. Additionally, they may contain human remains in the form of burials, cairns, or cremations.

Features are immovable remains of human activities including bedrock mortars, house pits, hunting blinds, and rock art. Artifacts are objects made by humans and include tools (i.e., projectile points, scrapers, awls, milling equipment, baskets, etc.), waste products from artifact manufacture (i.e., stone chipping waste/debitage, shell bead debris), and non-utilitarian objects (i.e., beads, ornaments, figurines, charmstones, ceremonial objects). Subsistence remains include the inedible portions of foods (i.e., shells, bones, nut husks), edible portions that were not consumed (i.e., charred seeds), and the organic soils resulting from the breaking down of discarded portions (i.e., midden).

Historic Period Archaeological Resources

Historic period archaeological resources are places where people lived, performed activities, altered the environment, and created art between 1769 AD and 50 years before the present. Like prehistoric archaeological resources, historic period archaeological resources often occur around where people lived, but also include the remains of industrial, agricultural, recreational, and waste management activities. These can be surface features, subsurface features, or the remains of activities.

Surface features include walls, mining cuts, dams, canals, tent pads, and hunting blinds. Subsurface features include trash pits, privies, burials, mines, pipes, and foundations; artifacts such as tools, glass, metal, and ceramic containers, remains of industrial machinery, toys, etc. Activity remains can include remains of dietary, agricultural, and industrial waste activities such as eggshells, bones, and seeds from meals, buried animal carcasses, mining waste rock, and cyanide leach pits.

Built-environment Resources

Built-environment resources were constructed at least 50 years before the present. The most obvious are historic-era buildings, but these also include structures and objects. A building is defined as a construction that was created principally to shelter any form of human activity. These include barns, bunkhouses, office buildings, factories, sheds, and others. Structures were made for purposes other than providing human shelter. These include roads, dams, irrigation systems, oilrigs, tunnels, mines, and tent pads. An object is a construction that is primarily artistic in nature or is relatively small in scale and simply constructed. Although it may be movable, an object is associated with a specific setting or environment. Monuments, trail markers, graffiti, billboards, ornamental gardens, and decorative landscape elements are all examples of objects.

Ethnographic Resources

Ethnographic resources are those places that have importance within a particular culture or are tied to important historical events. Generally these places are of importance to people in the present even though they reflect aspects of local, state, or national history, are tied to particular people, or to the mythology and traditions of particular cultures. One type of ethnographic resource is the TCP. TCPs are most commonly associated with Native American cultures but also include areas important to other social groups, such as World War II internment camps to Japanese Americans. While TCPs may have built, natural, or archaeological elements that can be identified by outside observers, they may also be intangible, such as landscapes, rock formations, or water bodies identified with particular elements or events in stories, myth, and oral histories.

4.5.3.2 Methodology

Given the programmatic nature of this analysis, the following methods were used to provide a general idea of the number and type of cultural resources present in the County. A general assessment of cultural resource sensitivity was produced by combining a series of sources, including the CDCA cultural resources and Native American elements maps, a buried resource sensitivity study, and the OHP Listed Resources locations (BLM 1980; Meyer et al. 2010; OHP 2014). Additionally, a prehistoric and historic period predictive model was produced for the County. The prehistoric predictive model was based on four data sets: (1) named streams, water bodies, wetlands and playas/dry lakes; (2) ecotone boundaries; (3) obsidian and fine-grained volcanic toolstone sources; and, (4) slope.

For a complete assessment of cultural resources sensitivity for the SEDAs, a series of investigations would need to occur, including: record searches with the Eastern Information Center of the California Historical Resource Information System (CHRIS); archival map research to identify overall sensitivity for historic-era resources as well as locations of built resources of at least 45 years of age; review of built-environment resources using aerial photography sources; field surveys designed to confirm known resource locations and identify new resources; and, correspondence with Native American contacts provided by the NAHC and a search of the sacred lands database maintained by the NAHC.

California Desert Conservation Area

During the planning phase for the establishment of the CDCA, the BLM conducted extensive fieldwork to identify areas of higher cultural resources sensitivity and engaged in consultation and ethnographic interviews with Native Americans to identify areas important for their cultures, both religiously and secularly. It is important to note that neither the culturally sensitive areas nor the areas important to Native Americans are a complete list of places that may contain cultural resources. The resulting maps are a useful starting point for determine cultural resources sensitivity in the area covered by the CDCA, including a large percentage of the County (BLM 1980a). These maps were digitized using geographic information systems and overlain with the SEDA boundaries to find any points of overlap. As the CDCA maps lack fine detail and cover a wide area, these points of overlap can only be used as a guide.

The entirety of the Chicago Valley SEDA is within an area designated as sensitive for cultural resources, likely due to the presence of the Resting Spring Range obsidian quarry, an important prehistoric resource. The Rose Valley SEDA contains several areas of cultural sensitivity and is adjacent to the Fossil Falls ACEC, which contains important cultural resources including rock art locales. Pearsonville and Owens Lake SEDAs both are very near to sensitive areas. Additional sensitive areas are located along the eastern edge of the OVSA, but the study area itself falls outside of the CDCA (BLM 1980b). While also not in the CDCA, the Fish Slough ACEC, managed by the BLM Bishop Field Office, is immediately to the west of the Laws SEDA within the OVSA and contains important cultural resources including large rock art locales (BLM 2014).

The areas directly adjacent to the OVSA and the Owens Lake, Rose Valley, and Pearsonville SEDAs are included in the CDCA map as sensitive for Native American values. These three SEDAs are along the CDCA boundary so there are likely additional areas important to Native Americans that are not reflected on these maps. A sensitive area lies just east of the Trona SEDA. The Chicago Valley and Charleston View SEDAs are separated from each other by an area sensitive for Native American cultural values (BLM 1980c).

Buried Resource Sensitivity Study

In 2010, Far Western Archaeology Group completed *A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9*, including buried resource sensitivity modelling and mapping for the County. This map depicts the potential for encountering buried archaeological resources based on the age and distribution of geological deposits present at the ground surface combined with the landform slope and distance to water. Different areas had their buried resource sensitivity classified as very low, low, moderately low, moderate, moderately high, high, and very high. The SEDA boundaries were overlain over this sensitivity map to determine the sensitivity of the area for buried resources.

The Laws SEDA contained mostly low or moderate sensitivity landforms, but also areas that are very high for buried resources. Sensitivity analysis for the area underlying the now dry Owens Lake was not done in this study, but the areas surrounding the lake within the Owens Lake SEDA are primarily high and very high in their sensitivity, with smaller areas of moderate and moderately high sensitivity. Most of the Rose Valley SEDA is rated as moderately high for buried resource sensitivity, but a large area at the north end of the SEDA near Olancha is rated as very high. The Pearsonville SEDA is primarily moderate in its sensitivity, but contains areas that are considered very high, primarily on the west side of US 395. The Trona SEDA is entirely rated as moderate for buried resources, but areas surrounding it are rated very high. The Sandy Valley SEDA is almost entirely rated as moderate, with areas of low sensitivity. The Charleston View and Chicago Valley SEDAs both are primarily low in buried resource sensitivity, but include areas of moderately low and moderate sensitivity. The OVSA contains extensive potions north of Owens Lake east of US 395 that are considered to be high or very high for buried resources along with smaller areas of moderate and moderate to high sensitivity. Generally the area west of US 395 was deemed to be of low to moderate sensitivity for buried resources, although there are still portions along creeks that are moderately high to very high sensitivity (Meyer et al. 2010).

Predictive Model

Two cultural resources predictive models were designed during the OCTS (Aspen 2014) that was produced as part of the REGPA. The first identifies areas sensitive for encountering prehistoric cultural resources while the second identifies areas sensitive for encountering historic period archaeological and built environment resources.

<u>Prehistoric Period</u>

A buffer of 1,000 meters was applied to the named streams, water bodies, wetlands, and playas/dry lakes layer (obtained from the National Hydrological Database dataset) because this was one of the most common positive factors identified by Drews et al. (2004) in their analysis of various Great Basin regions (the Pilot-Thousand Springs Valley, the Ruby-Long Valley, Spring-Steptoe Valley, the Great Salt Lake area, and the Upper Snake River Valley). Additionally, research conducted by Garfinkel (1976) in the Fossil Falls and Little Lake region in the southwestern portion of the County suggested that prehistoric archaeological sites are commonly found near Pleistocene river channels, and playas/dry lakes, and that rock art sites are often found near water sources. Moreover, prehistoric sites in Death Valley National Park also tend to be located near water sources (NPS 2002), and thus this data set of locations of where water is presently and historically was included.

In addition to water, access to natural resources was another important consideration for prehistoric population settlement. Food resources such as mesquite and pinyon were important especially in the arid Great Basin, and prehistoric sites are often found near such resource locations (NPS 2002). A predictive model created for the Santa Ynez River Valley in western California (Neal 2007) found a positive correlation between sites and 200 meters of an ecotone boundary (i.e., the boundary between two different vegetation zones). In order to visualize this data, California Gap Analysis Project (Davis et al. 1998) data of vegetation zones from the University of California-Santa Barbara Biogeography Lab were plotted, and a 200 meter buffer between the different zones was cut out.

Other resources available in the County important to prehistoric populations include sources of raw material for making stone tools, in this case obsidian and fine-grained volcanic toolstone sources. Garfinkel (1976) noted the importance of obsidian sources as potential site locations, and thus locations of obsidian and fine-grained volcanic toolstone sources that were identified by the Northwest Research Obsidian Studies Laboratory are included in this analysis. It should be noted that sources of toolstone are important for the resource it offers, and groups likely made excursions and established temporary camps to exploit sources of toolstone on an as-needed basis, but toolstone source locations likely did not influence the location of more permanent settlements.

Slope was the final data set used in the prehistoric sensitivity analysis. Research conducted in Western Colorado (Kvamme 1985) found that most village sites were located on a 16.1 percent (9-degree) slope or lower, and that no sites were located steeper than 40 percent (21.8-degree) slope. Therefore, areas with a slope of less than 16.1 percent were included as areas where sites were likely to occur. Areas with slopes between 16.2and 40 percent are areas where sites may be located but are unlikely to occur, and areas over 40 percent are where sites are not likely to occur. These sensitive areas are depicted on Figure 4.5-1. Regions most sensitive for prehistoric resources are those areas within 1000 meters of a water source (in this case, named streams, water bodies, wetlands, and playas/dry lakes), within 200 meters of an ecotone boundary, near obsidian or fine-grained volcanic toolstone sources, and less than 16.1 percent slope (Figure 4.5-2). These areas of intersected prehistoric resource sensitivity were concentrated within the OVSA, which also contained an obsidian source.

Historic Period

The historic period archaeological and built-environment resource sensitivity model was based on four data sets: (1) named water bodies; (2) proximity to US 395; (3) proximity to the Old Spanish Trail; and, (4) the locations of mines that are at least 50 years old.

Named streams and water bodies were included because access to water was not only important for prehistoric peoples, but also for European and American settlers. Also, reservoirs are included which could contain historic period dams and associated infrastructure. US 395, previously known as Owens River Road, Indians Big Trail, the Midland Trail, Bullion Road, and El Camino Sierra was an important historic route for miners and settlers because it connected the Owens River Valley with Los Angeles via the Tehachapi Pass or Walker's Pass.

The Old Spanish Trail was a route linking New Mexico to California, opened in 1829. Historic period archaeological sites can be found in the trail corridor, the Inyo County portion of which passes through the southeast corner of the County. This route eventually became US 66, a popular cross-country road in the twentieth Century. These routes were included because temporary camps and other resources often occur near to travel corridors. Finally, many historic period cultural resources occur near mining locales, which may also be cultural resources in and of themselves. Regions most sensitive for historic period sites are likely to occur in those areas near historic roads and trails, mines, and near sources of water (Figure 4.5-3).

General Sensitivity Conclusions

The cultural resources sensitivity presented below for the SEDAs and the OVSA is based on a combination between all of the data sources and models described above. Taken together, the CDCA cultural resources and Native American cultural values sensitivity maps (BLM 1980b, 1980c), the geoarchaeological buried resources sensitivity map (Meyer et al. 2010), and the prehistoric and historic period resource sensitivity models provide a good basis for determining sensitivity. The presence of California Historical Land Marks, California Points of Historical Interest, California Register-listed historical resources, and National Register-listed historic properties within or adjacent to SEDAs were also taken into account in determining sensitivity (OHP 2014). Finally, the results of the *Hidden Hills Solar Energy Generating Systems Final Staff Assessment* and the *Hidden Hills Solar Ethnographic Report* were used to get a closer look at the sensitivity of the eastern portion of the Charleston View SEDA (CEC 2012; Gates 2012).

The sensitivity of the SEDAs and the OVSA was determined qualitatively. An area with low sensitivity would be where no resources or sensitive areas have been previously identified and there is a low likelihood of encountering buried resources. An area with moderate sensitivity would be where cultural resources are known to occur, but are not generally expected to be common, and contains landforms with moderate chance of encountering buried resources. Highly sensitive areas are those that have previously identified sensitive areas and high densities of cultural resources, plus areas that have highly sensitivity for buried resources. Areas with low to moderate and moderate to high sensitivity are intermediate categories that contained both higher sensitivity and lower sensitivity areas from different models.

Table 4.5-2 illustrates the cultural resources sensitivity of the different SEDAs and the OVSA. This information has only been developed as a general guide to sensitivity and the possibility of encountering cultural resources within SEDAs may occur in areas that are not expected to have high sensitivity.

Table 4.5-2
CULTURAL RESOURCES SENSITIVITY BY LOCATION

Location	Low	Low to Moderate	Moderate	Moderate to High	High
Western Solar Energy Group					
Laws SEDA				X	
Owens Lake SEDA					X[1]
Rose Valley SEDA					X
Pearsonville SEDA			X		
Owens Valley Study Area					X[2]
Southern Solar Energy Group					
Trona SEDA		X			
Eastern Solar Energy Group					
Chicago Valley SEDA					X
Charleston View SEDA					X[3]
Sandy Valley SEDA				X[3]	

Sources: Aspen; BLM 1980; CEC 2012; Meyer et al. 2010; OHP 2014
SEDA = Solar Energy Development Area
[1] Within the Owens Lake SEDA the sensitivity is generally very high, but moderate to high within the dry lake bed.
[2] Within the Owens Valley Study Area the sensitivity ranges from low to very high. Taken as a whole, the sensitivity is rated as high.
[3] Determined from the presence of the Old Spanish Trail, Pahrump Cultural Landscape, and other resource information from the Hidden Hills Solar Project.

Preliminary Project Specific Resource Identification

For projects built within SEDAs and/or the OVSA with the potential to impact cultural resources, prior to approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination by the County, the project proponents may be required to conduct and submit an inventory and evaluation of all cultural resources within the project area to the County and any other relevant agencies for review and approval. Inventory and evaluation needs to be conducted by a cultural resources specialist whose training and background conforms to the US Secretary of Interior's Professional Qualifications Standards, as published in CFR Title 36, part 61 and whose qualification are appropriate to the needs of the project. Inventory and evaluation methods vary according to resource type but need to include:

- **Historical Research:** This includes a CHRIS record search at the Eastern Information Center, review of ethnographic data, and review of historic maps and aerial photographs.

- **Consultation:** Consult with interested Native American groups identified by the NAHC and a search of their Sacred Lands File.

- **Sensitivity Modeling:** The modeling is conducted to help in predicting where significant archaeological and built environment resources may be found within the project area based on information from the historical research including: known cultural resources; historical maps; geologic maps, soils maps, and hydrological information; basic patterns of prehistoric and historical settlement; and local historical information.

- **Intensive Survey:** The survey covers100 percent of the preliminary project area to identify all of the cultural resources present. This shall be conducted with transects spaced no more than 15 meters apart, except when the slope is greater than 30 percent where transect separation may increase to 30 meters. These surveys should at a minimum follow the standards outlined in *National Register Bulletin 24: Guidelines for Local Surveys - A Basis for Preservation Planning* (Derry et al. 1985).

- **Field Documentation:** When encountered, all potentially significant cultural resources, including previously recorded cultural resources, shall be documented on Department of Parks and Recreation 523 series forms; other forms shall also be prepared as appropriate (e.g., negative survey form or isolate report form). Resource recording shall at a minimum follow the OHP guidance *Instructions for Recording Historical Resources* (OHP 1995). Photographic documentation shall include digital photographs of each site, cultural feature, diagnostic artifact, and isolate encountered. Site locations shall be plotted on the appropriate 7.5' USGS quadrangle using data collected with a submeter accurate global positioning system (GPS). Detailed site maps shall also be prepared using this same GPS. When encountered, all features, including isolates, shall be documented with preliminary scale plan and elevation drawings.

- **Evaluation:** For all identified resources, the cultural resources specialist shall evaluate the resources to determine if they qualify as any of the following:

    - Historical resources (State CEQA Guidelines Section 15064.5[a])
    - Unique archaeological resources under CEQA (PRC Section 21083.2)
    - Significant historic resources under CEQA (PRC Section 21084.1)
    - Cultural resources eligible for local registers

4.5.3.3 Impacts

The REGPA works to minimize impacts to cultural resources by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact sensitive cultural resources.

Impacts to cultural resources generally result from ground disturbance from construction, but may also include visual, auditory, olfactory, and access restricting impacts. At the programmatic level of analysis of this PEIR, it is not possible to know precisely the location, extent, and particular characteristics of potential impacts to resources. The details of potential impacts are not known in depth, general types of mitigation are outlined below that may be implemented to reduce potential negative cultural effects.

Impacts to Cultural and Paleontological Resources

The following potentially significant impacts are related to solar energy development within the SEDAs and the OVSA.

<u>Historical Resources</u>

Construction of solar facilities could potentially affect historical resources when resulting excavations and other activities alter the existing surface within the SEDAs and the OVSA. Such activities could include operation of heavy equipment, trenching for utilities, grading and vegetation clearing for access roads, site leveling, and foundation excavations. These activities would have the potential to adversely affect significant cultural resources. Temporary impacts to the visual setting could result from construction vehicles and increased dust generated during ground disturbances. Long-term impacts to the visual setting of historical resources could occur from the permanent presence of project structures. Depending on the type of solar resource and the topography, visual impacts may be visible for many miles. Solar power tower technology includes towers that are several hundred feet high and that can be viewed for many miles away; see Section 4.1. If these community scale developments occur on existing built environment infrastructure, such as paved areas or buildings, they are highly unlikely to impact buried resources; however, these activities may still impact the integrity of design, setting, materials, workmanship, or feeling of historical resources, particularly historic period buildings. Substantial adverse changes in the significance of a historical resource, as defined in Section 15064.5 of the State CEQA Guidelines, would be a potentially significant impact.

<u>Archaeological Resources</u>

Construction of solar facilities could potentially affect archaeological resources when resulting excavations and other activities alter the existing surface within the SEDAs and the OVSA. Such activities could include operation of heavy equipment, trenching for utilities, grading and vegetation clearing for access roads, site leveling, and foundation excavations. These activities would have the potential to adversely affect significant cultural resources. Temporary impacts to the visual setting of archaeological resources, such as trails and rock art sites, could result from construction vehicles and increased dust generated during ground disturbance. Long-term impacts to the visual setting of archaeological resources could occur from the permanent presence of renewable energy structures. If these community scale developments occur on existing built environment infrastructure, such as paved areas or buildings, they are highly unlikely to impact buried resources. Visual impacts to prehistoric and historic period archaeological resources would mostly be removed after decommissioning, as long as the site was properly restored to its preconstruction state. Substantial adverse changes in the significance of an archaeological resource, as defined in Section 15064.5 of the State CEQA Guidelines, would be a potentially significant impact.

Disturbance of Human Remains

The potential exists for the construction of solar facilities to lead to the inadvertent uncovering or damaging of unknown buried human remains or cultural items, including associated funerary objects, sacred objects, and objects of cultural patrimony, which are typically unmarked. Disturbance may also include human remains interred outside of formal cemeteries. Impacts would be potentially significant.

Paleontological Resources

Construction of solar facilities could potentially directly or indirectly destroy paleontological resources or unique geologic features primarily during excavation and earth-moving phases of construction. Site reconnaissance, survey activities, and geotechnical exploration are likely to be required prior to construction of a solar project if there project is located on high/very high or moderate/unknown potential for fossil yield. The goal of geotechnical exploration is to identify geologic materials and their properties, and typically minimizes disturbance to the soil and the subsurface stratigraphy (so that drill cores can be adequately observed or tested). The retrieval of significant paleontological resources from geotechnical borings is unlikely due to the size of the boreholes but they do provide additional information about the depth and extent of subsurface fossil-bearing geologic units.

Solar PV and solar trough technologies require very flat terrain so the volume of grading and earth moving could be substantial. Solar power tower technologies typically require less grading but may require certain types of construction activities such as predrilling and vibratory pedestal insertion of heliostat foundations that could destroy any fossils encountered.

For the most part, construction activities can be accomplished using conventional earth-moving equipment (e.g., tractors, backhoes, and graders), which allows for mitigation of potential impacts to below a level of significance through monitoring. Professional paleontologists and approved paleontological monitors typically carry out mitigation programs by examining new exposures of soil and rock created during excavation, grading, and trenching. With mitigation, these newly exposed fossils become available for scientific research, education, display, and preservation into perpetuity at museums. Construction and operational activities could also indirectly impact paleontological resources via hydrologic effects and increased public access. This access can increase unauthorized-collection activities, theft, and/or vandalism of resources.

General Types of Mitigation

Adverse effects to historical resources (CRHP-eligible cultural resources) would be resolved on a project-specific level. As part of this process, resource identification efforts including pedestrian surveys, formal government-to-government tribal consultation with state lead agencies, and engagement with Native American communities would be necessary. Examples of ways to resolve adverse effects include:

- Plan ground disturbance to avoid cultural resources.
- Deed cultural resources into permanent conservation easements.
- Cap or cover archaeological resources with a layer of soil before building on the location.
- Plan parks, greenspace, or other open space to incorporate cultural resources.
- Write synthetic documents summarizing the current understanding of the history and prehistory of the project area and vicinity.
- Recover data for archaeological resources.
- Develop interpretive material to correspond with recreational uses to educate the public about protecting cultural resources and avoiding disturbance of sensitive resources.
- Develop partnerships to assist in the training of groups and individuals to participate in site stewardship programs.
- Coordinate with visual resources staff to ensure visual management standards consider cultural resources and tribal consultation to include landmarks of cultural significance to Native Americans (e.g., TCPs, trails).
- Measures to address visual impacts to the setting of built-environment resources include:
    - Existing mature plant specimens shall be used for screening during construction, operation, and decommissioning phases. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation.
    - Revegetation of disturbed areas within the project area shall occur as various activities are completed. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any extant vegetation is disturbed. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. Plant material shall be consistent with surrounding native vegetation.
    - The color of the wells, pipelines, storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity. For example, integral color concrete should be used in place of standard gray concrete.
    - The final revegetation and painting plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the design objectives and criteria are being met.

  - Specific impact identification and adjustments to finish specifications shall occur during project design. Implementation of the revegetation and coloration plans shall occur during oilfield development. Maintenance and monitoring requirements shall be implemented after initial project construction for a period of 5 years, or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist.

- Protective measures and monitoring protocols can be implemented for built environment resources located in close proximity to a project but that are not anticipated to be directly impacted by demolition or development but which may be subject to other direct impacts such as change in historic setting, vibration, noise, or inadvertent damage include:

  - Historic Structures Reports (HSR) shall be prepared for buildings and structures adjacent to the Project area for which detailed information is required to develop protection measures. Reports shall be completed for buildings and structures that appear to be in poor condition and, therefore, potentially sensitive to development-related activities such as vibration. These reports shall determine if predevelopment stabilization through temporary shoring and bracing of these buildings is warranted.

  - Predevelopment condition assessments shall be prepared for buildings and structures that qualify as historical resources that are adjacent to the project area and are structurally stable, but could be unintentionally damaged during development. Should there be any question as to whether the project caused damage, these condition assessments will provide confirmation of the predevelopment condition.

  - Precautions to protect built environment historical resources from construction vehicles, debris, and dust may include fencing or debris meshing. Temporary mothballing, and fire and intrusion protection may be needed if the buildings are unoccupied during oil and gas field development.

  - Protective measures shall be field checked as needed during development by a qualified architectural historian with demonstrated experience conducting monitoring of this nature. Vibration monitoring may be required for buildings determined susceptible to vibration damage located in close proximity to development activities or machinery that cause vibration.

  - These measures are designed to avoid direct impacts such as vibration that may result in structural damage or inadvertent direct impacts. Structural damage or demolition would otherwise potentially result in a significant impact because character-defining features and aspects of historic integrity that convey the resource's significance could be materially impaired.

  - Redesign of relevant facilities shall be used to avoid destruction or damage where feasible.

- For built resources that will be directly and significantly impacted, mitigation typically includes:

- Historic American Building Survey (HABS), Historic American Engineering Record (HAER), and Historic American Landscape Survey (HALS) records will be prepared for historical resources that will be demolished. The HABS/HAER/HALS documentation will be prepared as appropriate for the impacted historical resource with HABS normally completed at Level II. These reports will include written and photographic documentation of the significant and character-defining features of these properties. While this documentation will not reduce impacts to a less than a significant level, it is needed to capture and preserve a description of the significant information and characteristics associated with the resource.

- All HABS/HAER/HALS reports are subject to review and approval by the NPS. Following approval, the lead agencies will produce sufficient copies for distribution to identified repositories, including the Library of Congress, the California State Library, the University of California Water Resources Center Archives, and any local repositories, as appropriate and agreed upon with the County Planning Department and interested parties. Distribution will ensure the formal documentation is retained and conveyed to a wide audience.

- Deconstruction and salvage of materials from demolished buildings will be performed to the extent feasible to enable the restoration of similar buildings and structures outside of the area of direct impact. Deconstruction and salvage will not reduce impacts to a less than significant level, but will help to ensure that similar resources are restored and maintained in manner that will ensure that examples of the resource type are preserved.

- Relocate historically significant resources for which demolition cannot be feasibly avoided by development. In such circumstances, relocation must meet the requirements for the Special Criteria Consideration for Moved Buildings, Structures, and Objects to ensure the significance of the building is retained.

- Require that the preservation or reuse of an eligible structure follow Department of the Interior (DOI) Standards and Guidelines for Archeology and Historic Preservation. If the building is considered a historic resource under CEQA, the local building inspector must grant code alternatives under the State Historic Building Code.

- In a case where HABS/HAER documentation does not provide adequate mitigation to reduce impacts to a less than significant level, projects would normally be required to take additional steps to capture the history and memory of the resource and share this information with the public using various methods such as Web media, static displays, interpretive signs, use of on-site volunteer docents, or informational brochures.

- Measures to address impacts to cultural resources at a landscape scale should follow the guidance in *A Strategy for Improving Mitigation Policies and Practices of the Department of the Interior* (DOI 2014) and the *National Park Service Preservation*

Brief 36 - Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes, including but not limited to:

- o Document the individual landscape characteristics and features in the context of the landscape as a whole in a Cultural Landscape Report, including contributing and non-contributing features.
- o Develop compensatory mitigation.
- o Coordinate with other agencies.
- o Monitor and evaluate the progress of long-term mitigation.
- o Develop and maintain geospatial information systems for use in identifying existing and potential conservation strategies and development opportunities.

4.5.4 Level of Significance before Mitigation

Based on the analyses in Section 4.5.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to: (1) historic resources, (2) archaeological resources, (3) human remains, and (4) paleontological resources. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to cultural resources when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA.

4.5.5 Mitigation Measures

Cultural resources mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to cultural resources. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof-top or ground mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on cultural resources and would not require a project-specific cultural resources evaluation or implementation of the mitigation measures listed herein. In such cases, the County shall document that no impacts to cultural resources will occur and no mitigation measures are necessary in lieu of the cultural resources evaluation required in Mitigation Measure CUL-1a.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact cultural resources, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The

County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

The following mitigation measures are proposed to reduce significant impacts to cultural resources during construction and operation of projects developed under the REGPA.

MM CUL-1a: Designate project cultural resources staff.

Project Cultural Resources Specialist. Prior to the approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination by the County Planning Department, a cultural resources specialist whose training and background conforms to the US Secretary of Interior's Professional Qualifications Standards, as published in CFR Title 36, part 61 shall be retained by the project owner to conduct a cultural resources inventory, evaluate an resources, produce a Cultural Resources Management and Treatment Plan and other related plans for the approved project and to implement any required plans and mitigation, as necessary as determined by the cultural resource specialist. Their qualifications shall be appropriate to the needs of the project. If the project primarily impacts resources archaeological in nature, the cultural resources specialist shall have a background in archaeology, anthropology or cultural resource management. If the project impacts primarily built environment resources, the cultural resources specialist shall have a background in architectural history. Resumes of the proposed cultural resources staff shall be submitted to the County Planning Department or other CEQA lead agency for review and approval. The Monitoring and Treatment Plan (Mitigation Measure CUL-1c) shall be prepared and implemented under the direction of the cultural resources specialist and shall address and incorporate CUL-1a through CUL-1g.

Additional Cultural Resources Staff. The project's cultural resources specialist may obtain the services of specialists, cultural resources monitors and field crew if needed, to assist in identification, evaluation, mitigation, monitoring, and curation activities. Cultural resources staff shall have a Bachelor's degree in anthropology, archaeology, history, architectural history or related field, and demonstrated field experience. These individuals must also meet local lead agency qualifications and their resumes must be reviewed and approved by local lead agency staff prior to beginning work.

MM CUL-1b: Draft a Historical Resources Treatment Plan.

To mitigate the potential impacts on historical resources identified during inventory of the project area, a treatment plan for historical resources shall be developed by, depending on the nature of the resources identified, an archaeologist and/or architectural historian who meets the Secretary of Interior's Professional Qualifications Standards. This treatment plan would include data recovery plans that would address NRHP/CRHR-eligible cultural resources that would be impacted by the project by requiring some level of extracting the scientific value and analysis of the resources prior to development.

MM CUL-1c: Draft a Monitoring and Treatment Plan.

To mitigate the potential impacts related to inadvertent discovery of archaeological resources during construction, the project proponents shall have a Secretary of the Interior-qualified archaeologist implement a monitoring program and an unanticipated archaeological resource treatment plan. The qualified archaeologist will evaluate any resources uncovered during ground disturbing activities implement appropriate treatment as specified in the archaeological resource treatment plan. During all phases of the project that include ground disturbance, these ground-disturbing activities will be observed by an archaeological monitor, as determined necessary by the archaeologist.

a. If, during the course of monitoring, a potentially significant resource is discovered, the qualified archaeologist will have the authority to stop or redirect ground disturbing activities away from the resource until it can be evaluated.

b. If previously unknown cultural deposits are discovered during the course of construction, such as previously undiscovered stratified cultural deposits, a testing program will be implemented to evaluate the stratified cultural deposit.

c. A separate Native American monitor shall be retained by the project proponent to monitor ground disturbing activities in and around archaeological resources. The Native American monitor shall be selected through consultation with Native American tribal groups. The Native American monitor shall work in conjunction with the qualified archaeologist.

MM CUL-1d: Grant authority to halt project activities.

Prior to the approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination by the County or the relevant CEQA lead agency, the project owner shall submit a written document granting authority to halt project related activities to the project's cultural resources specialist (as defined in Mitigation Measure CUL-1a) and cultural resources monitors in the event of a discovery or possible damage to a cultural resource. Redirection of project related activities shall be accomplished under the direction of the project supervisor in consultation with the cultural resources specialist. The details of this agreement shall be stipulated in the Cultural Resources Management and Treatment Plan as required in Mitigation Measure CUL-1b.

MM CUL-1e: Develop a Cultural Resources Worker Environmental Awareness Program.

Prior to and for the duration of project activities, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site. The training shall be prepared by the project's cultural resources specialist (as defined in CUL-1) in consultation with local Native Americans and shall incorporate the traditions and beliefs of local Native American groups into the presentation. The presentation may be conducted by any qualified cultural resources specialist and a Native American, if possible, and may be presented in the form of a video. A consulting fee or honorarium shall be negotiated with the local Native American consultants and presenter and paid to them for their participation. The training may be discontinued when project activities are completed or suspended, but must be resumed when project activities resume.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during ground-disturbance, and the range of variation in the appearance of such deposits;
5. A discussion of what local Native American beliefs are, how those beliefs are related to cultural resources that may be found in the area, and the appropriate respectful behavior towards sacred places and objects;
6. Instruction that all cultural resources specialists have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the project cultural resources specialist (as defined in CUL-1);
7. Instruction that employees are to avoid areas flagged as sensitive for cultural resources;
8. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the project cultural resources specialist (as defined in CUL-1), and that redirection of work would be determined by the project supervisor and the project cultural resources specialist;
9. An informational brochure that identifies reporting procedures in the event of a discovery;
10. An acknowledgement form signed by each worker indicating that they have received the training which shall be submitted to the County Planning Department and any other CEQA lead agency; and
11. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

MM CUL-1f: Conduct cultural resources reporting.

The project cultural resources specialist shall document results in interim and final reports as necessary. The contents and timing of these reports shall be stipulated in the Cultural Resources Management and Treatment Plan (CUL-1b).

Final reports for archaeological resources, human remains, and some landscapes, shall be written by or under the direction of a Secretary of the Interior qualified archaeologist or architectural historian as appropriate for the project. Reports shall be provided in the State Office of Historic Preservation's *Archaeological Resource Management Reports: Recommended Contents and Format* and local agency formats. Final documents shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, Department of Parks and Recreation 523 forms, data recovery reports, and any additional research reports not previously submitted to the CHRIS and the State Historic Preservation Officer shall be included as appendices.

MM CUL-1g: Proper curation of cultural resources collections.

All archaeological materials retained as a result of the cultural resources investigations (survey, testing, data recovery) shall be curated in accordance the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum.

MM CUL-2: Implement proper actions in the event of the incidental discovery of human remains.

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie potential remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or are believed to be Native American, the Coroner shall notify the NAHC within 24 hours. In accordance with California PRC Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant of the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the County, the disposition of the human remains.

Should human remains be discovered at any time during construction of the project, construction in the vicinity would halt and the County Coroner would be contacted immediately. If the Coroner determines that the remains do not require an assessment of cause of death and are probably Native American, then the NAHC would be contacted to identify the most likely descendant.

MM PALEO-1: Protect paleontological resources.

Project developers shall document in a paleontological resources assessment report whether paleontological resources exist in a project area on the basis of the following: the geologic context of the region and site and its potential to contain paleontological resources (including the fossil yield potential), a records search of institutions holding paleontological collections from California desert regions, a review of published and unpublished literature for past paleontological finds in the area, and coordination with paleontological researchers working locally in potentially affected geographic areas (or studying similar geologic strata).

If paleontological resources are present at the site or if the geologic units to be encountered by the project (at the surface or the subsurface) have a high/very high or moderate/unknown fossil yield, a Paleontological Resources Management Plan shall be developed.

The plan shall include the following types of requirements:

1. The qualifications of the principal investigator and monitoring personnel
2. Construction crew awareness training content, procedures, and requirements
3. Any measures to prevent potential looting, vandalism, or erosion impacts
4. The location, frequency, and schedule for on-site monitoring activities
5. Criteria for identifying and evaluating potential fossil specimens or localities
6. A plan for the use of protective barriers and signs, or implementation of other physical or administrative protection measures
7. Collection and salvage procedures
8. Identification of an institution or museum willing and able to accept any fossils discovered
9. Compliance monitoring and reporting procedures

If the geologic units that would be affected by the project have been determined to have low fossil yield potential, paleontological resources shall be included as an element in construction worker awareness training. The training shall include measures to be followed in the event of unanticipated discoveries, including suspension of construction activities in the vicinity.

The Paleontological Resources Management Plan shall evaluate all of the construction methods proposed, including destructive excavation techniques. Where applicable, the principal investigator shall include in the plan an evaluation of the potential for such techniques to disturb or destroy paleontological resources, an evaluation of whether loss of such fossils would represent a significant impact, and discussion of mitigation or compensatory measures (such as recordation/recovery of similar resources elsewhere on the site) that are necessary to avoid or substantially reduce the impact.

4.5.6 Significant Unavoidable Adverse Impacts

Based on the analysis above, and considering the State CEQA Guidelines Appendix G thresholds of significance, future utility scale, distributed generation, and community scale solar energy facility projects would have a potentially significant effect on historical and archeological resources when viewed programmatically. Mitigation measures will be applied to reduce these impacts; however, while significant adverse effects to some impacted cultural resources will be mitigated to less than significant by these measures, impacts to other resources may remain significant, unavoidable, and unmitigable. Additional avoidance and mitigation strategies for individual resources will be applied in the second-tier, project-level analyses. In some cases, depending on the type of project, nature of the resource, and type of mitigation proposed, less significant impacts may be possible. However, at the programmatic level of analysis, impacts to cultural resources are considered significant and unavoidable.

The aforementioned impacts and mitigation measures are focused on solar energy development within the SEDAs and the OVSA. These impacts do not vary by SEDA.

At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to cultural resources by distributed generation or community scale facilities. Because of this uncertainty, at the programmatic level of analysis the impact from these types of development is considered significant and unavoidable.

Community scale renewable energy development could occur anywhere within the County. These developments would be generally small in scale and may be placed in existing developed areas. Thus, by following the general mitigation measures outlined in Section 4.5.3.3 (subsection: General Types of Mitigation), impacts to cultural resources could likely be less than significant. Due to the uncertainty of the placement of this development, the impact of community scale renewable energy development is considered significant and unavoidable.

For potential impacts of the proposed project, Mitigation Measures CUL-1a through CUL-1g and 2 would reduce the impacts related to the construction of solar facilities on historical and archeological resources; additionally, visual impacts to historical resources would mostly be removed after decommissioning, as long as the site was properly restored to its preconstruction state. However, the impacts to cultural resources would remain significant and unmitigable, as it is not possible to know precisely the location, extent, and particular characteristics of impacts to these resources at the programmatic level of analysis.

For paleontological resources, Mitigation Measure PALEO-1a would reduce the impacts related to ground disturbance and excavation during construction as well as the indirect effect of increased public access to paleontological resources by requiring appropriate collection and salvage of any important paleontological resources. With implementation of the mitigation measure, impacts to paleontological resources would be reduced to less than significant at the programmatic level of analysis.

A summary of the potential impacts to cultural resources and the associated mitigation measure(s) for each impact is included in Table 4.5-3.

Table 4.5-3
SUMMARY OF IMPACTS TO CULTURAL RESOURCES AND MITIGATION MEASURES

Impact	Mitigation Measure(s)	Significance Following Mitigation
Solar energy facility projects would affect historical resources.	CUL-1a, CUL-1b, CUL-1c, CUL-1d, CUL-1e, CUL-1f, CUL-1g	Significant and unavoidable
Solar energy facility projects would affect archaeological resources.	CUL-1a, CUL-1b, CUL-1c, CUL-1d, CUL-1e, CUL-1f, CUL-1g	Significant and unavoidable
Solar energy facility projects would disturb human remains.	CUL-1a, CUL-1b, CUL-1c, CUL-1d, CUL-1e, CUL-1f, CUL-1g, CUL-2	Significant and unavoidable
Future projects would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	PALEO-1a	Less than significant with mitigation

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4.6 GEOLOGY AND SOILS

4.6.1 Existing Conditions

4.6.1.1 Regional Geologic and Topographic Setting

The proposed SEDAs and the OVSA are located near the western border of the Basin and Range Geomorphic Province, a region generally characterized by north-south trending block-faulted mountain ranges (horsts), intervening down-dropped alluvial valleys (grabens), associated fault structures (as outlined below), and internal drainage. The Basin and Range Province extends from southern Oregon to central Mexico, and incorporates portions of several states including California, Oregon, Idaho, Utah, Nevada, Arizona and New Mexico. In east-central California, the Basin and Range Province extends approximately 270 miles along the eastern flank of the Sierra Nevada Province to the west, and borders the Mojave Desert Province on the south. This portion of the Basin and Range Province varies in width from approximately 20 to 85 miles, and encompasses all of Inyo County (including the SEDAs and the OVSA), as well as portions of Mono, Kern and San Bernardino counties.

For much of the Paleozoic Era (between approximately 550 and 240 million years ago), the current Basin and Range Province was covered by a vast, shallow sea, with associated deposition of extensive sedimentary deposits such as limestone and sandstone. Subsequent periods of metamorphism and tectonic compression altered the sedimentary rocks and resulted in a number of thrust fault deposits, wherein older strata are pushed (or thrust) up to overlie younger rocks. Beginning in the early Miocene Epoch (approximately 22 million years ago), a period of crustal extension (stretching and thinning) began in the western US, resulting in the formation of parallel normal faults (with predominantly vertical offset) and the associated Basin and Range horst and graben structure described above. Subsequent uplift of the Sierra Nevada during the Quaternary Period (approximately the last 1.6 million years) has produced extensive local topographic relief, with only 80 miles separating the highest and lowest points in the contiguous US (i.e., Mount Whitney at 14,505 feet amsl, and Badwater Basin at 282 feet below mean sea level). The Sierra Nevada also generates a substantial rain shadow effect to the east, with much of the Basin and Range Province exhibiting arid conditions.

4.6.1.2 Inyo County Geologic and Topographic Setting

Geologic conditions within Inyo County reflect the Basin and Range structural and topographic profiles described above. Specifically, the County includes several uplifted horst mountain blocks (e.g., portions of the Sierra Nevada, Inyo/White and Panamint mountains), intervening and down-dropped graben valleys (e.g., Owens, Saline, Panamint, Eureka and Death valleys), and related parallel (or sub-parallel) faults. Associated stratigraphy includes units ranging in age from Precambrian (more than approximately 550 million years old) to Holocene (less than approximately 11,000 years old), with a mix of igneous, metamorphic and sedimentary deposits, as outlined below (California Geological Survey [CGS] 1977, formerly the California Division of Mines and Geology).

Stratigraphy

Precambrian Strata

Precambrian deposits occur in portions of the White/Inyo Mountains in areas east and southeast of Bishop, the Panamint and Grapevine/Funeral mountains in the southern and eastern portions of the County (along the western and eastern boundaries of Death Valley, respectively), and the Amargosa and Nopah ranges in the southeastern portion of the County. Associated strata consist primarily of metasedimentary rocks exhibiting varying degrees of alteration, such as limestone, conglomerate, shale, quartzite, gneiss and marble.

Paleozoic Strata

Paleozoic rocks occur in many of the noted areas of Precambrian exposures (either separately or in association with the Precambrian strata), as well as in areas including the Inyo Mountains east of Owens Lake and the northern Panamint Mountains. These units include similar metasedimentary strata as described for Precambrian rocks, as well localized minor pyroclastic deposits (i.e., fragmented volcanic materials such as ash and tuff derived from explosive volcanic events).

Mesozoic Strata

Mesozoic-age strata (between approximately 240 and 65 million years old) include granitic igneous intrusive rocks in the eastern-most portion of the Sierra Nevada Batholith (a large igneous intrusive body), portions of the northern and central White/Inyo Mountains (including the Inyo and Hunter Mountain batholiths), the southern Panamint Mountains, the Coso Range, and the Argus Mountains in the southwestern portion of the County. Minor exposures of undifferentiated Mesozoic volcanic and metavolcanic rocks also occur in areas including the central White/Inyo Mountains (northeast of Owens Lake) and the southern Panamint Mountains.

Tertiary Strata

Tertiary-age rocks (between approximately 65 and 1.6 million years old) in the County consist primarily of volcanic deposits, including extensive exposures in the central and southern White/Inyo Mountains, the southern Panamint Mountains, and portions of the northern Grapevine/Funeral Mountains and Amargosa Range. These units encompass large fields of flow-type deposits (e.g., basalt flows), as well as pyroclastic materials.

Quaternary Strata

Quaternary deposits include extensive alluvial materials in most local valleys and on local alluvial fans; scattered older sedimentary rocks (mostly poorly consolidated sandstone and shale, some of which may be late Tertiary in age) in various areas including the White/Inyo, Argus, Coso, Panamint and Grapevine/Funeral mountains; and minor glacial deposits in the eastern Sierra Nevada. In addition, relatively large exposures of Quaternary flow and pyroclastic volcanic deposits are present in areas including the northwestern (Owens Valley) and southwestern (Argus Range and Coso Mountains) portions of the County.

Holocene Strata

Holocene deposits include younger alluvial and eolian (wind-derived) materials in the larger valleys, as well as native topsoil. Alluvial materials typically include unconsolidated to poorly-consolidated granular deposits, with variable amounts of silt to cobble size grains. Eolian deposits consist primarily of well-sorted sand, and occur locally as dunes. Native topsoils consist primarily of sandy and loamy-sand deposits, with variable amounts of silty to gravelly soils and subsoils, clays (e.g., in playa deposits), fine- to coarse-grained sands, and rocky soils. Soil depths vary locally, with thicker deposits generally located in alluvial valleys and steeper areas exhibiting shallower soils (USDA 2014).

Groundwater

All or part of 38 groundwater basins are mapped within the County, with local basins occurring primarily in valleys and typically associated with unconfined or partially confined alluvial aquifers. These basins vary in size (areal extent) from approximately 312 (Santa Rosa Flat) to 921,000 acres (Death Valley), and comprise an important source of water for local agricultural, domestic, municipal and environmental uses. Additional discussion of local groundwater resources is provided in Section 4.6.1.3 and in Section 4.9.

Structure and Seismicity

The County is within the Basin and Range Province as previously described, and encompasses a series of generally parallel, north-south trending normal faults located primarily at the horst/graben boundaries. Like much of California, the County is within a seismically active region, with a number of local faults designated as active or potentially active. Specifically, active faults are defined as those exhibiting historic seismicity or displacement of Holocene-age materials, while potentially active faults have no historic seismicity and displace Pleistocene (between approximately 1.6 million and 11,000 years old) but not Holocene strata. A summary of estimated maximum earthquake magnitudes associated with the principal active and potentially active faults within the County is provided in Table 4.6-1, with the fault locations shown on Figure 4.6-1. A number of CGS Earthquake Fault Zones (formerly termed Alquist-Priolo Special Studies Zones and Fault-Rupture Hazard Zones) are present within the County, in association with several of the noted faults. Specifically, these zones are associated with segments of several local faults including the Round Valley, Fish Slough, White Mountains, Owens Valley, Northern Death Valley, Hunter Mountain, Saline Valley, Panamint Valley, Southern Sierra Nevada and Independence faults. The described CGS fault zone designations are generally intended to "[r]egulate development near active faults so as to mitigate the hazard of surface fault rupture" (CGS 2007).

Much of Inyo County is within a Seismic Zone 4 designation, which is the highest of four national seismic risk zones and is generally interpreted as an area with a 1 in 10 chance of experiencing a 0.4-Gal[1] peak ground acceleration (ground shaking) level within the next

[1] Gal is a unit of acceleration due to earth's gravity. It is defined as 1 centimeter per second squared (1 cm/s^2).

50 years. Portions of the southeastern County are within a Seismic Zone 3 designation, which exhibits a 1 in 10 chance of experiencing a 0.3- Gal peak ground acceleration level within the next 50 years. Based on these designations and the described locations of active and potentially active faults, peak ground acceleration values of 0.4 Gal or higher (depending on site-specific proximity to faults and earthquake locations) could potentially occur in much of the County.

Table 4.6-1
LOCAL ACTIVE AND POTENTIALLY ACTIVE FAULT SEISMICITY IN INYO COUNTY

Fault[1]	Maximum Moment Magnitude (M_{max})[2]
Owens Valley	7.6
Independence	7.1
Hunter Mountain-Saline Valley	7.2
White Mountains	7.4
Birch Creek	6.4
Deep Springs	6.6
Southern Sierra Nevada	7.3
Northern Death Valley	7.4
Round Valley	7.0
Death Valley	7.2
Panamint Valley	7.4
Fish Slough	6.6
Hilton Creek	6.7
Little Lake	6.9

Source: LADWP 2013
[1] Refer to Figure 4.6-1 for fault locations.
[2] Moment magnitude is a measure of earthquake size in terms of the energy released, and is based on the seismic moment of the earthquake (i.e., the rigidity of the Earth multiplied by average amount of slip on the subject fault and the size of the area that slipped).

4.6.1.3 Project Area Geologic and Topographic Setting

Western Solar Energy Group

Laws Solar Energy Development Area

The Laws SEDA includes primarily level topography associated with northern Owens Valley, with some moderately sloping terrain along alluvial fan deposits in the eastern SEDA (in association with the White/Inyo Mountains). Surface exposures consist primarily of late Quaternary alluvial/lake and alluvial fan deposits, as well as loamy to sandy topsoils, with older

Quaternary alluvial/sedimentary deposits and Paleozoic metasediments to the east, and Quaternary volcanics and granitic intrusive rocks to the west. The Laws SEDA is located within the regional Owens Valley Groundwater Basin, with average well depths of between 110 and 360 feet (although shallow, perched groundwater may also potentially occur).

Portions of several active and potentially active faults, as well as associated CGS Earthquake Fault Zone designations, are located within or adjacent to the Laws SEDA, including the Owens Valley, White Mountains and Fish Slough faults. As previously described, the Laws SEDA is within a Seismic Zone 4 designation, with faults and other major regional fault structures that are capable of generating earthquake events with magnitudes of between approximately 6.4 and 7.6.

Owens Lake Solar Energy Development Area

The Owens Lake SEDA is essentially level, and includes the Owens Lake surface and adjacent areas of Owens Valley. Surface exposures consist predominantly of late Quaternary alluvial/lake deposits and sandy to loamy topsoils, with surrounding strata including granitic intrusive rocks to the west and southeast, Quaternary volcanics to the east, and Paleozoic metasedimentary rocks and Mesozoic volcanics to the north and northeast. The Owens Lake SEDA is located within the Owens Valley Groundwater Basin, and may also include shallow perched aquifers as described above for the Laws SEDA and in Section 4.9.

Portions of several active and potentially active faults, as well as associated CGS Earthquake Fault Zone designations, are located within or adjacent to the Owens Lake SEDA, including the Owens Valley and Southern Sierra Nevada faults. As noted above for the Laws SEDA, the Owens Lake SEDA is within a Seismic Zone 4 designation, with faults and other major regional fault structures that are capable of generating large-magnitude earthquake events.

Rose Valley Solar Energy Development Area

The Rose Valley SEDA exhibits generally level topography with some moderately sloping terrain along the east and west boundaries in association with the Coso Mountain foothills and alluvial fan deposits along the eastern front of the Sierra Nevada. Surface exposures consist predominantly of late Quaternary alluvial/lake deposits, sandy to loamy topsoils, and Tertiary volcanics in the central SEDA area (west and south of South Haiwee Reservoir), with granitic intrusive rocks to the west, and older Quaternary alluvial/sedimentary rocks and Tertiary and Quaternary volcanics to the east. The Rose Valley SEDA is located within the area of the Owens Valley (north SEDA) and Rose Valley (south SEDA) groundwater basins (with local well depths ranging between approximately 20 and 360 feet), and may also include shallow perched aquifers as described above for the Laws SEDA and in Section 4.9.

Portions of several active and potentially active faults are located within or adjacent to the Rose Valley SEDA, including the Owens Valley and Little Lake faults. No CGS Earthquake Fault Zone designations are located within or adjacent to the Rose Valley SEDA. As noted above for the Laws SEDA, the Rose Valley SEDA is within a Seismic Zone 4 designation, with faults and other major regional fault structures that are capable of generating large-magnitude earthquake events.

Pearsonville Solar Energy Development Area

The Pearsonville SEDA includes primarily level terrain, with rolling topography present in several areas west of US 395, and low uneven volcanic (basalt) fields present in the northeastern SEDA. Surface exposures consist predominantly of late Quaternary alluvial/lake deposits and sandy to loamy topsoils, with some Quaternary volcanics exposed in the northeastern portion of the SEDA as noted. Granitic intrusive rocks occur to the west along the eastern front of the Sierra Nevada, and Tertiary and Quaternary volcanics are present to the east in the Coso Mountains. The Pearsonville SEDA is located within the areal extent of the Indian Wells Valley Groundwater Basin, with historic local well depths varying between approximately 75 and 1,000 feet (US Geological Survey 1991), and shallow perched aquifers potentially present (as described above for the Laws SEDA and in Section 4.9).

Portions of one or more active and potentially active faults, as well as associated CGS Earthquake Fault Zone designations, are located within or adjacent to the Pearsonville SEDA, including the Little Lake Fault. As noted above for the Laws SEDA, the Pearsonville SEDA is within a Seismic Zone 4 designation, with faults and other major regional fault structures that are capable of generating large-magnitude earthquake events.

Owens Valley Study Area

The OVSA includes mostly level topography related to the Owens River Valley, with steeper terrain present locally to the east and west in association with various features such as foothills, volcanic structures and alluvial fans related to the Sierra Nevada and White/Inyo Mountains. Surface exposures consist predominantly of late Quaternary alluvial/lake deposits and sandy to loamy topsoils with a number of Quaternary volcanic exposures present in the central portion of the Study Area and Mesozoic granitic/volcanic rocks exposed northwest of Owens Lake. Granitic intrusive rocks occur in most areas to the west along the eastern front of the Sierra Nevada along with localized glacial deposits and Mesozoic volcanics. Areas to the east include diverse exposures of Precambrian and Paleozoic metasedimentary rocks, Mesozoic granitic intrusives, Mesozoic, Tertiary and Quaternary volcanics, and older Quaternary alluvial/sedimentary deposits. The OVSA is located within the areal extent of the Owens Valley Groundwater Basin as described above for the Laws SEDA and in Section 4.9.

Portions of several active and potentially active faults, as well as associated CGS Earthquake Fault Zone designations, are located within or adjacent to the OVSA, including the White Mountains, Fish Slough, Round Valley, Birch Creek, Owens Valley, Southern Sierra Nevada and Independence faults. The OVSA is within a Seismic Zone 4 designation, with faults and other major regional fault structures that are capable of generating large-magnitude earthquake events.

Southern Solar Energy Group

Trona Solar Energy Development Area

The Trona SEDA includes mostly level topography associated with the northern extent of Searles Valley while steeper terrain is present to the west (the Argus Range), east, and north (the Slate Range). Surface exposures within the SEDA consist predominantly of late Quaternary alluvial/lake deposits and sandy to loamy topsoils with predominantly Mesozoic granitic intrusive rocks to the west, and areas to the east and north exhibiting a diverse assemblage of Precambrian and Paleozoic metasediments, Mesozoic granitic intrusives, Mesozoic and Tertiary volcanics, and older Quaternary alluvial/sedimentary deposits. The Trona SEDA is within the areal extent of the Searles Valley Groundwater Basin, with average reported well depths of approximately 300 feet (although shallow, perched groundwater may also potentially occur, as described in Section 4.9).

A trace of the potentially active Wilson Canyon Fault extends northwest-southeast through the southwestern portion of the SEDA, with additional active and potentially active fault segments in off-site areas to the east (e.g., the Ash Hills Fault (CGS 2010)). No CGS Earthquake Fault Zone designations are located within or adjacent to the Trona SEDA. As previously described, the Trona SEDA is within a Seismic Zone 4 designation, with major regional faults capable of generating large-magnitude earthquake events.

A potential off-site transmission corridor has also been identified for the Trona SEDA, and would likely extend along SR 178 to an existing 115-kV transmission line located along US 395 near the City of Ridgecrest (in Kern County). This corridor includes mostly moderate to level topography, although some more rugged terrain is also present (e.g., in the southern Argus range). Surface exposures include primarily late Quaternary alluvial/lake deposits and sandy to loamy topsoils, with minor exposures of Mesozoic granitic intrusive rocks. The described corridor would cross a number of potentially active faults (with associated CGS Earthquake Fault Zone designations near the City of Ridgecrest), including structures within the Little Lake Fault Zone, and is within the areal extent of the Searles Valley and Indian Wells Valley groundwater basins.

Eastern Solar Energy Group

<u>Chicago Valley Solar Energy Development Area</u>

The Chicago Valley SEDA includes generally level topography, with some relief associated with alluvial fan features extending west and east, respectively, from the adjacent Nopah and Resting Spring ranges. Surface exposures within the SEDA consist of late Quaternary alluvial/lake deposits and sandy to loamy topsoils, with areas to the west (Resting Spring Range) exhibiting predominantly Paleozoic metasediments and Tertiary volcanics, and areas to the east (Nopah Range) encompassing mostly Precambrian and Paleozoic metasediments. The Chicago Valley SEDA is within the areal extent of the Amargosa Valley Groundwater Basin with average reported well depths of approximately 2,500 feet (although shallow, perched groundwater may also potentially occur, as described in Section 4.9).

No active or potentially active faults (or associated CGS Earthquake Fault Zone designations) are located within or adjacent to the Chicago Valley SEDA although several such faults are mapped in nearby areas to the northeast and northwest (including the Pahrump Valley Fault,). The Chicago Valley SEDA is within a Seismic Zone 3 designation, with major regional faults capable of generating large-magnitude earthquake events.

A potential off-site transmission corridor has also been identified for the Chicago Valley SEDA, and extends generally east- northeast from the SEDA for approximately 19 miles to an existing

500-kV transmission line located along SR 160 in the State of Nevada. This corridor includes rugged terrain in the Nopah Range and generally moderate to level topography in other areas, with surface exposures including Precambrian and Paleozoic metasediments, late Quaternary alluvial/lake deposits, alluvial fans, and sandy to loamy topsoils. A number of potentially active fault traces are located within or adjacent to the described corridor (although no associated CGS Earthquake Fault Zone designations are present), which is also within the areal extent of the Amargosa Valley and Pahrump Valley groundwater basins (with the latter basin described below for the Charleston View SEDA).

Charleston View Solar Energy Development Area

The Charleston View SEDA includes mostly level topography, with some minor uplands in the southwestern SEDA "panhandle" area associated with the adjacent Nopah Range to the west and/or the northernmost extension of the Kingston Range. Surface exposures within the SEDA consist predominantly of late Quaternary alluvial/lake deposits, alluvial fans, older Quaternary alluvial/sedimentary deposits, and sandy to loamy topsoils in the more level areas (with impervious substrata, or hardpans, occurring locally); also present are a mix of Precambrian/Paleozoic metasedimentary rocks and older Quaternary alluvial/sedimentary deposits in the "panhandle" area uplands. The Nopah Range to the west includes primarily Precambrian and Paleozoic metasediments, with areas to the south (Kingston Range) exhibiting Precambrian/Paleozoic metasedimentary strata and a mix of Tertiary granitic and metamorphic rocks.

The Charleston View SEDA is within the areal extent of the Pahrump Valley and California Valley groundwater basins. Local groundwater levels for the Pahrump Valley Basin in the site vicinity are approximately 130 feet below the surface (CEC 2012), with reported well depths of between 8 and 42 feet for the California Valley Basin (DWR 2003) and perched groundwater also potentially present in both basins (as described in Section 4.9). The northern portion of the Pahrump Valley Basin has also experienced an overall decline of aquifer levels in recent decades with an associated area of potential subsidence (although this area is located northeast of the Charleston View SEDA and is primarily in the State of Nevada (CEC 2012).

No active or potentially active faults (or associated CGS Earthquake Fault Zone designations) are mapped within the Charleston View SEDA, although the potentially active Pahrump Valley Fault is adjacent to the northwest and several additional faults occur within nearby areas to the north and northwest. The Charleston View SEDA is within a Seismic Zone 3 designation, with major regional faults capable of generating large-magnitude earthquake events.

A potential off-site transmission corridor has also been identified for the Charleston View SEDA and extends generally northeast from the eastern SEDA boundary along Tecopa Road to an existing 500-kVtransmission line located along SR 160 in the State of Nevada (CEC 2012). This corridor includes generally similar topographic and geologic conditions as the Charleston View SEDA with generally level terrain and surface exposures consisting predominantly of late Quaternary alluvial/lake deposits, older Quaternary alluvial/sedimentary deposits, alluvial fans, and sandy to loamy topsoils. A number of potentially active fault traces are located within or adjacent to the described corridor, which is also within the areal extent of the Nevada portion of the Pahrump Valley Groundwater Basin (but is not within or adjacent to the noted area of potential subsidence (CEC 2012).

<u>Sandy Valley Solar Energy Development Area</u>

The Sandy Valley SEDA includes predominantly level topography, with steeper terrain to the east (Kingston Range) and south (Mesquite Mountains). Surface exposures within the SEDA consist of late Quaternary alluvial/lake deposits and sandy to loamy topsoils with the Kingston Range and Mesquite Mountains both encompassing Precambrian/Paleozoic metasedimentary rocks; the Kingston Range also includes Tertiary granitic and metamorphic units as noted for the Charleston View SEDA. The Sandy Valley SEDA is within the areal extent of the Mesquite Valley Groundwater Basin, with average well depths of 1,020 feet (although perched groundwater may also potentially occur, as described in Section 4.9).

No active or potentially active faults (or associated CGS Earthquake Fault Zone designations) are mapped within the Sandy Valley SEDA although several such faults are mapped in areas to the north and northwest (including the Pahrump Valley Fault). The Sandy Valley SEDA is within a Seismic Zone 3 designation with major regional faults capable of generating large-magnitude earthquake events.

4.6.1.4 Regulatory Framework

Development of the proposed project would be subject to a number of regulatory requirements and industry standards related to potential geologic hazards. These requirements and standards typically involve measures to evaluate risk and mitigate potential hazards through design and construction techniques. Specific guidelines encompassing geologic criteria that may be applicable to the design and construction of the proposed project include: (1) International Code Council, Inc.; International Building Code (IBC; International Code Council, Inc. 2006); and the related California Building Code (CBC; CCR Title 24, Part 2); (2) The California Seismic Hazards Mapping Act (Public Resources Code [PRC] Division 2, Chapter 7.8, Section 2690 et seq.); (3) The Alquist-Priolo Earthquake Fault Zoning Act (PRC Division 2, Chapter 7.5, Section 2621 et seq.); and (4) applicable standards of the County, including the General Plan Public Safety Element (2001, as amended). Summary descriptions of the listed geologic standards are provided below, and are incorporated into the discussion of impacts in Section 4.6.3 as applicable. Discussion of erosion-related issues and associated requirements under federal, state, and County standards is discussed briefly below, with more detailed information provided in Section 4.9 of this PEIR due to the relationship between erosion and storm water/water quality concerns.

Federal and State Regulations

<u>International Building Code and California Building Code Standards</u>

The, which encompasses the former Uniform Building Code (UBC), is produced by the International Code Council, Inc. to provide standard specifications for engineering and construction activities, including measures to address geologic and soil concerns. Specifically, these measures encompass issues such as seismic loading (e.g., classifying seismic zones and faults), ground motion, and engineered fill specifications (e.g., fill composition, compaction levels and moisture content). The referenced guidelines, while not comprising formal regulatory requirements per se, are widely accepted by regulatory authorities and are routinely included in related standards such as local development codes. The IBC guidelines are regularly updated to reflect current industry standards and practices including criteria such as the American Society of Civil Engineers and ASTM International (formerly known as the American Society for Testing and Materials).

The previously referenced CBC guidelines are derived from the IBC and encompass criteria specific to California such as geologic and seismic characteristics. Specifically, the CBC includes the following requirements related to geologic issues: general provisions (Chapter 1); structural design, including soil and seismic loading (Chapters 16/16A); structural tests and special inspections, including seismic resistance (Chapters 17/17A); soils and foundations (Chapters 18/18A); construction safeguards (Chapter 33); and grading, including excavation, fill, drainage, and erosion control criteria (Appendix J of the guidelines).

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act (CSHMA) provides a statewide seismic hazard mapping and technical advisory program to assist local governments in protecting public health and safety relative to seismic hazards. The CSHMA provides direction and funding for the State Geologist to compile seismic hazard maps and to make those maps available to local governments. The CSHMA, along with related standards in the Seismic Hazards Mapping Regulations (CCR Title 14, Division 2, Chapter 8, Article 10, Section 3270 et seq.), also directs local governments to require the completion and review of appropriate geotechnical studies prior to approving development projects. These requirements are implemented on a local level through means such as General Plan directives and regulatory ordinances.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Act (PRC Division 2, Chapter 7.5, Section 2621 et seq.) is intended to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults, and to distribute maps of these zones to all affected cities, counties, and state agencies. The Alquist-Priolo Act also requires completion of a geologic investigation prior to project approval, to demonstrate that applicable structures would not be constructed across active faults, and/or that appropriate set-backs from such faults (generally 50 feet) are included in the project design.

Local Regulations

Inyo County General Plan

Section 9.6, Geologic and Seismic Hazards, in the Public Safety Element of the County General Plan (2001, as amended) identifies a number of potential issues related to geologic and seismic hazards, including protection from risks associated with seismic and volcanic events. The principal goal identified to address these concerns, Goal GEO-1, is to "Minimize exposure to hazards and structural damage from geologic and seismic conditions." Several associated policies and implementation measures are applicable to the proposed project, as summarized below.

Public Safety Element

- Policy GEO-1.1: Development of Hazard Constraints. This policy is intended to restrict development of habitable structures in areas subject to severe geologic hazards, such as CGS Earthquake Fault Zones, liquefaction zones, landslide areas, and unstable soils. Associated implementation measures include efforts to work with the State to prepare and update Earthquake Fault Zones, maintain a map of known seismic hazards within the County, require 50-foot (or other applicable) set-backs from active faults and/or Earthquake Fault Zones, and preclude the placement of critical facilities (e.g., schools and hospitals) within Earthquake Fault Zones.

- Policy GEO-1.2: Seismic Retrofitting. This policy is intended to support and encourage seismic upgrades to older facilities that may be structurally deficient. Associated implementation measures include efforts to work with private developers to implement seismic upgrades of existing facilities, and develop a program to inventory structures requiring seismic upgrades.

- Policy GEO-1.4: Design Measures. This policy requires that development of new habitable structures in potential seismic hazard zones include appropriate engineering design strategies to comply with applicable building standards. Associated implementation measures include efforts to ensure that new development meets current seismic safety standards for the associated seismic hazard zone.

- Policy GEO-1.5: Slope Constraints. This policy restricts development on slopes with grades of over 30 percent. Associated implementation measures include revising the County Zoning Code to set limits for development on steep slopes.

4.6.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on geology and soils if it would result in any of the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault (refer to CGS Special Publication 42);
    b. Strong seismic ground shaking;
    c. Seismic related ground failure, including liquefaction; or
    d. Landslides

- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, corrosive effects, liquefaction or collapse;
- Be located on expansive soil, as defined in Section 1803.5.3 of the CBC, creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

4.6.3 Impact Analysis

The REGPA is designed to minimize impacts to geology and soils resources by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact sensitive geology and soils resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to geology and soils against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the geology and soils analysis conducted for the project.

4.6.3.1 Western Solar Energy Group

Laws Solar Energy Development Area

Ground Rupture

Ground rupture from fault displacement and related effects such as lurching (i.e., the rolling motion of surface materials associated with passing seismic waves) can adversely affect surface and subsurface structures, including foundations and utilities. As previously described, portions of several active and potentially active faults, as well as associated CGS Earthquake Fault Zones, are located within or adjacent to the Laws SEDA. Based on these conditions, as well as the fact that site-specific facility locations are unknown, proposed project facilities could potentially be subject to damage from fault-related ground rupture (depending on their location within the SEDA), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial measures.

Seismic Ground Shaking

As described above in Section 4.6.1, much of the County, including the Laws SEDA, could experience peak ground shaking values of 0.4 g or more in association with large earthquake events along major faults. This level of ground shaking could potentially result in significant impacts to proposed facilities such as solar arrays and utilities. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial measures.

Liquefaction and Related Effects

Liquefaction is the phenomenon whereby soils subjected to seismic (or other) ground shaking effects exhibit a loss of shear strength and then demonstrate fluid-like flow behavior due to excess pore pressure. Loose, granular and saturated soils with relative densities of less than approximately 70 percent are most susceptible to these effects, with liquefaction potential greatest at depths of less than approximately 50 feet. Surface and near surface manifestations from these events can include loss of support for structures/foundations, pavement and utilities; excessive dynamic settlement (including volume reductions in dry soils); and other effects such as lateral spreading (i.e., horizontal displacement on sloped surfaces as a result of underlying liquefaction). Based on the seismic environment described above for the Laws SEDA and vicinity, the noted occurrence of granular (alluvial) soils, the potential for shallow groundwater (including perched aquifers), and the fact that site-specific facility locations are unknown, the potential for on-site liquefaction and related effects is considered moderate to high and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Landslides/Slope Instability

As described above in Section 4.6.1, the Laws SEDA and adjacent areas exhibit primarily level topography, with proposed solar facilities typically requiring slopes of less than five percent (refer to Section 3.0). As a result, steeper natural or manufactured slopes potentially subject to landslides and other types of slope failure are not expected to occur within the SEDA development area. Because the nature and location of site-specific development is unknown, however, landslide deposits and/or steeper manufactured slopes could potentially be encountered/constructed during development within the Laws SEDA, and associated impacts are considered potentially significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Erosion/Topsoil Loss

The Laws SEDA and adjacent areas include a number of unconsolidated and sandy alluvial/topsoil deposits that exhibit generally high susceptibility for erosion and off-site sediment transport (sedimentation). Project activities would likely involve the removal of surface stabilizing features such as vegetation, excavation of existing compacted materials from graded or cut areas, redeposition of excavated material as fill in proposed development sites and, potentially, disposal of extracted groundwater onto graded or unstable areas (i.e., during construction dewatering). Because the primary effects of erosion and sedimentation are associated with water quality concerns as previously noted, detailed discussion of potential erosion/sedimentation impacts is provided in Section 4.9.

Geologic and Soil Instability

Implementation of proposed solar development associated with the Laws SEDA could potentially result in impacts associated with geologic and soil instability. Specifically, this could involve issues related to compressible/collapsible soils, subsidence, and corrosive soils as outlined below, based on geologic conditions and the fact that site-specific facility locations are unknown. Potential instability issues involving landslides/slopes, seismically-induced liquefaction and related effects are addressed above in this section.

Compressible/Collapsible Soils

Based on preliminary analysis, a number of on-site materials may be compressible under loading, including alluvial, alluvial fan and topsoil deposits. In addition, portions of these materials may also be susceptible to hydro-collapse, a process in which loose, dry soils undergo rapid consolidation (collapse) when wetted. The potential occurrence of compressible and collapsible soils could result in hazards such as differential settlement (different degrees of settlement over relatively short distances), with associated significant potential effects to structures, pavement, foundations/footings and utilities. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Subsidence

Potential impacts related to subsidence are typically associated with conditions such as groundwater (or other fluid) withdrawal and/or loading related to the placement of larger surface structures. Depending on the nature of solar and related facility development at the Laws SEDA, short- and/or long-term groundwater withdrawal may be required (refer to Table 2-1), along with structural loading for facilities such as substation and transmission structures. Accordingly, associated potential impacts to structures, pavement, foundations/footings and utilities would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Corrosive Soils

Based on preliminary analysis, surficial materials within and adjacent to the Laws SEDA could potentially exhibit corrosive properties related to factors such as pH, chloride or soluble sulfate levels, as well as resistivity values (i.e., the ability to restrict, or resist, electric current). Long-term exposure to corrosive soils can result in significant impacts related to deterioration and eventual failure of concrete (from sulfate) and metal (from pH, chloride and resistivity) structures, including foundations, reinforcing steel and subsurface utilities. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Expansive Soils

Expansive (or shrink-swell) behavior is attributable to the water-holding capacity of clay minerals, and can adversely affect the integrity of facilities such as pavement, foundations, and subsurface structures and utilities. Based on preliminary analysis, a number of surficial and underlying deposits within the Laws SEDA and adjacent areas may potentially exhibit expansive properties, with associated significant potential impacts to proposed solar development. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails completion of site-specific geotechnical analyses for proposed development to evaluate potential geologic hazards and identify associated standard remedial design and construction measures.

Wastewater Disposal

Implementation of proposed solar development with the Laws SEDA would not involve the use of septic tanks or alternative wastewater systems (refer to Section 3.0). Accordingly, no associated impacts would result from proposed project implementation.

Owens Lake Solar Energy Development Area

Ground Rupture

Potential ground rupture and related hazards in the Owens Lake SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant.

Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Seismic Ground Shaking

Potential ground shaking hazards in the Owens Lake SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Liquefaction and Related Effects

Potential liquefaction and related hazards in the Owens Lake SEDA are similar to those described above for the Laws SEDA, although such potential would likely be limited to areas outside of the Owen Lake playa. Specifically, the Owens Lake playa exhibits a higher content of fine-grained materials such as silt and clay, with a correspondingly lower liquefaction potential. Potential liquefaction and related impacts associated with development of the Owens Lake SEDA would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Owens Lake SEDA are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Owens Lake SEDA are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Owens Lake SEDA are generally similar to those described above for the Laws SEDA. For hazards related to compressible/collapsible soils, this conclusion is applicable primarily to areas of alluvial deposits, while subsidence and corrosion hazards are associated with most on-site and adjacent areas. Associated potential impacts would be significant, with related mitigation the same as that outlined above for the Laws SEDA (as described below in Section 4.6.5).

Expansive Soils

Potential hazards related to expansive soils in the Owens Lake SEDA are similar to those described above for the Laws SEDA, with this potential anticipated to be generally higher within the Owen Lake playa due to the abundance of finer-grained (clay) materials. Associated potential impacts would be significant, with related mitigation the same as that outlined above for the Laws SEDA (as described below in Section 4.6.5).

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Owen Lake SEDA would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

Rose Valley Solar Energy Development Area

Ground Rupture

Potential ground rupture and related hazards in the Rose Valley SEDA are similar to those described above for the Laws SEDA (although no CGS Earthquake Hazard Zones are present), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Seismic Ground Shaking

Potential ground shaking hazards in the Rose Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Liquefaction and Related Effects

Potential liquefaction and related hazards in the Rose Valley SEDA are similar to those described above for the Laws SEDA, although such potential would be low in areas of exposed or shallow bedrock (i.e., areas west and south of South Haiwee Reservoir, refer to Section 4.6.1). Potential liquefaction and related impacts associated with development of the Rose Valley SEDA would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Rose Valley SEDA are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Rose Valley SEDA are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Rose Valley SEDA are similar to those described above for the Laws SEDA (except for areas with exposed or shallow bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Rose Valley SEDA are similar to those described above for the Laws SEDA (except for areas with exposed or shallow bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Rose Valley SEDA would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

Pearsonville Solar Energy Development Area

Ground Rupture

Potential ground rupture and related hazards in the Pearsonville SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Seismic Ground Shaking

Potential ground shaking hazards in the Pearsonville SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Liquefaction and Related Effects

Potential liquefaction and related hazards in the Pearsonville SEDA are similar to those described above for the Laws SEDA, although such potential would be low in areas of exposed or shallow bedrock (e.g., the northeastern portion of the SEDA, refer to Section 4.6.1). Potential liquefaction and related impacts associated with development of the Pearsonville SEDA would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Pearsonville SEDA are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Pearsonville SEDA are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Pearsonville SEDA are similar to those described above for the Laws SEDA (except for areas with exposed or shallow bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Pearsonville SEDA are similar to those described above for the Laws SEDA (except for areas with exposed or shallow bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Pearsonville SEDA would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

Owens Valley Study Area

Ground Rupture

Potential ground rupture and related hazards in the OVSA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Seismic Ground Shaking

Potential ground shaking hazards in the OVSA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Liquefaction and Related Effects

Potential liquefaction and related hazards in the OVSA are similar to those described above for the Laws SEDA, although such potential would be low in areas of exposed or shallow bedrock (e.g., the central portion of the OVSA and locations northwest of Owens Lake, refer to Section 4.6.1). Potential liquefaction and related impacts associated with development of the OVSA would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the OVSA are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the OVSA are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the OVSA are similar to those described above for the Laws SEDA (except for areas with shallow or exposed bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the OVSA are similar to those described above for the Laws SEDA (except for areas with shallow or exposed bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the OVSA would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

4.6.3.2 Southern Solar Energy Group

Trona Solar Energy Development Area

Ground Rupture

Potential ground rupture and related hazards in the Trona SEDA are similar to those described above for the Laws SEDA (although no CGS Earthquake Hazard Zones are present), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. As previously described, the potential off-site transmission corridor associated with the Trona SEDA may include one or more potentially active faults (and associated CGS Earthquake Fault Zones), with related potential ground rupture effects to be evaluated during site-specific geotechnical investigation if applicable (i.e., if the noted corridor is included as part of the proposed Trona SEDA development).

Seismic Ground Shaking

Potential ground shaking hazards in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Liquefaction and Related Effects

Potential liquefaction hazards in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Trona SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Trona SEDA and the potential off-site transmission corridor would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

4.6.3.3 Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

Ground Rupture

Because no active or potentially active faults (or associated CGS Earthquake Fault Zones) are mapped or known to occur within the Chicago Valley SEDA, ground rupture hazards are low and associated potential impacts would be less than significant. It should be noted, however, that surface displacements such as lurching or cracking could potentially occur at locations within or adjacent to the Chicago Valley SEDA as a result of off-site seismic activity, although the probability of such events is considered low. Because assessment of seismic ground rupture potential is a standard element of geotechnical investigation, this potential hazard would be evaluated as part of the site-specific geotechnical analyses outlined below in Section 4.6.5. As previously described, the potential off-site transmission corridor associated with the Chicago Valley SEDA may include one or more potentially active faults, with associated potential ground rupture effects to be evaluated during site-specific geotechnical investigation if applicable (i.e., if the noted corridor is included as part of the proposed Chicago Valley SEDA development).

Seismic Ground Shaking

Potential ground shaking hazards in the Chicago Valley SEDA and the potential off-site transmission corridor are generally similar to those described above for the Laws SEDA, although associated peak ground shaking values would be somewhat lower due to the location of this SEDA and adjacent areas in a Seismic Zone 3 designation (as opposed to a Seismic Zone 4 for the Laws SEDA, refer to Section 4.6.1). Associated potential impacts would remain significant, however, and related mitigation is identified below in Section 4.6.5 to address these potential impacts (and entails similar measures as noted above for the Laws SEDA).

Liquefaction and Related Effects

Potential liquefaction hazards in the Chicago Valley SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, although such potential would be low in areas of exposed or shallow bedrock. Potential liquefaction and related impacts associated with development of the Chicago Valley SEDA and the potential off-site transmission corridor would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Chicago Valley SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Chicago Valley SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Chicago Valley SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Chicago Valley SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Chicago Valley SEDA and the potential off-site transmission corridor would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

Charleston View Solar Energy Development Area

Ground Rupture

Because no active or potentially active faults are mapped or known to occur within Charleston View SEDA, ground rupture hazards are generally low and associated potential impacts would be less than significant. It should be noted, however, that surface displacements such as lurching or cracking could potentially occur at locations within or adjacent to the Charleston View SEDA as a result of off-site seismic activity (e.g., along the adjacent Pahrump Fault), although the probability of such events is considered low. Because assessment of seismic ground rupture potential is a standard element of geotechnical investigation, this potential hazard would be evaluated as part of the site-specific geotechnical analyses outlined below in Section 4.6.5. As previously described, the potential off-site transmission corridor associated with the Charleston View SEDA may include one or more active or potentially active faults, with associated potential ground rupture effects to be evaluated during site-specific geotechnical investigation if applicable (i.e., if the noted corridor is included as part of the proposed Charleston View SEDA development).

Seismic Ground Shaking

Potential ground shaking hazards in the Charleston View SEDA and the potential off-site transmission corridor are generally similar to those described above for the Laws SEDA, although associated peak ground shaking values would be somewhat lower due to: (1) the location of this SEDA and adjacent areas in a Seismic Zone 3, as opposed to a Seismic Zone 4 for the Laws SEDA (refer to Section 4.6.1); and (2) the presence of exposed or shallow bedrock in the southwestern “panhandle” portion of the Charleston View SEDA (refer to Section 4.6.1). Associated potential impacts would remain significant, however, and related mitigation is identified below in Section 4.6.5 to address these potential impacts (and entails similar measures as noted above for the Laws SEDA).

Liquefaction and Related Effects

Potential liquefaction and related hazards in the Charleston View SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, although such potential would be low in areas of exposed or shallow bedrock. Potential liquefaction and related impacts associated with development of the Charleston View SEDA and the potential off-site transmission corridor would remain significant, however, due to the presence of alluvial deposits in a number of on-site and adjacent areas. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Landslides/Slope Instability

Potential landslide/slope instability hazards in the Charleston View SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Erosion/Topsoil Loss

Potential erosion-related hazards in the Charleston View SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

Geologic and Soil Instability

Potential hazards related to geologic and soil instability in the Charleston View SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA (except for areas with shallow or exposed bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Charleston View SEDA and the potential off-site transmission corridor are similar to those described above for the Laws SEDA (except for areas with shallow or exposed bedrock), and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Charleston View SEDA and the potential off-site transmission corridor would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

Sandy Valley Solar Energy Development Area

<u>Ground Rupture</u>

Because no active or potentially active faults (or associated CGS Earthquake Fault Zones) are mapped or known to occur within the Sandy Valley SEDA, ground rupture hazards are low and associated potential impacts would be less than significant. As previously noted, however, surface displacements such as lurching or cracking could potentially occur at locations within or adjacent to the Sandy Valley SEDA as a result of off-site seismic activity, although the probability of such events is considered low. Because assessment of seismic ground rupture potential is a standard element of geotechnical investigation, this potential hazard would be evaluated as part of the site-specific geotechnical analyses outlined below in Section 4.6.5.

<u>Seismic Ground Shaking</u>

Potential ground shaking hazards in the Sandy Valley SEDA are generally similar to those described above for the Laws SEDA, although associated peak ground shaking values would be somewhat lower due to the location of this SEDA in a Seismic Zone 3 designation (as opposed to a Seismic Zone 4 for the Laws SEDA, refer to Section 4.6.1). Associated potential impacts would remain significant, however, and related mitigation is identified below in Section 4.6.5 to address these potential impacts (and entails similar measures as noted above for the Laws SEDA).

<u>Liquefaction and Related Effects</u>

Potential liquefaction hazards in the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

<u>Landslides/Slope Instability</u>

Potential landslide/slope instability hazards in the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated impacts are potentially significant (i.e., depending on the nature and location of proposed development). Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

<u>Erosion/Topsoil Loss</u>

Potential erosion-related hazards in the Sandy Valley SEDA are similar to those described above for the Laws SEDA. As previously noted, these potential effects are addressed in Section 4.9 due to their relationship to water quality concerns.

<u>Geologic and Soil Instability</u>

Potential hazards related to geologic and soil instability in the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Expansive Soils

Potential hazards related to expansive soils in the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.6.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Wastewater Disposal

As described above for the Laws SEDA, implementation of proposed solar development within the Sandy Valley SEDA would not involve the use of septic tanks or alternative wastewater systems. Accordingly, no associated impacts would result from proposed project implementation.

4.6.4 Level of Significance before Mitigation

Based on the analyses in Section 4.6.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to: (1) seismic ground rupture, ground acceleration (ground shaking), and liquefaction/related effects (e.g., dynamic settlement); (2) landslides/slope instability; (3) geologic and soil instability; and (4) expansive soils. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to geology and soils when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA.

4.6.5 Mitigation Measures

Geology and soils mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to geology and soils. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on geology and soils and would not require a geological investigation or implementation of the geology and soils mitigation measures listed in this section. In such cases, the County shall document that no impacts to geology and soils would occur and no mitigation measures are necessary in lieu of the geotechnical investigation required in Mitigation Measure GEO-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact geological resources and soils, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.6.3 and 4.6.4, implementation of solar energy projects under the REGPA could result in potentially significant impacts related to geology and soils. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to geology and soils, and may reduce them to below a level of significance in most cases.

MM GEO-1: Conduct site-specific geotechnical investigations.

Site-specific geotechnical investigations will be completed for utility scale proposed development within the individual SEDAs and the OVSA, and the potential off-site transmission corridors associated with the Charleston View, Chicago Valley, and Trona SEDAs (if applicable), prior to final project design approval. These investigations will identify site-specific criteria related to considerations such as grading, excavation, fill, and structure/facility design. All applicable results and recommendations from the geotechnical investigations will be incorporated into the associated individual project design documents to address identified potential geologic and soil hazards, including but not necessarily limited to: ground rupture; ground acceleration (ground shaking); soil liquefaction (and related issues such as dynamic settlement and lateral spreading); landslides/slope instability; geologic and soil instability (including compressible/collapsible soils, subsidence, and corrosive soils); and expansive soils. The final project design documents will also encompass applicable standard design and construction practices from sources including the CBC, IBC, and County standards, as well as the results/recommendations of County plan review and on-the-ground geotechnical observations and testing to be conducted during project excavation, grading and construction activities (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications). A summary of the types of remedial measures typically associated with identified potential geologic and soil hazards, pursuant to applicable regulatory and industry standards (as noted), is provided below. The remedial measures identified/recommended as part of the described site-specific geotechnical investigations will take priority over the more general types of standard regulatory/industry measures listed below.

- Ground Rupture: (1) locate (or relocate) applicable facilities away from known active (or potentially active) faults and outside of associated CGS Earthquake Fault Zones; and (2) require appropriate (typically 50-foot) building exclusion buffers on either side of applicable fault traces.

- Ground Acceleration (Ground Shaking): (1) incorporate applicable seismic loading factors (e.g., IBC/CBC criteria) into the design of facilities such as structures, foundations/slabs, pavement, utilities, manufactured slopes, retaining walls and drainage facilities; (2) use remedial grading techniques where appropriate (e.g., removing/replacing and/or reconditioning unsuitable soils); and (3) use properly engineered fill per applicable industry/regulatory standards (e.g., IBC/CBC), including criteria such as appropriate fill composition, placement methodology, compaction levels, and moisture content.

- Liquefaction and Related Effects: (1) remove unsuitable soils and replace with engineered fill (as previously described), per applicable regulatory/industry standards (e.g., IBC/CBC); (2) employ measures such as deep soil mixing (i.e., introducing cement to consolidate loose soils) or use of subsurface structures (e.g., stone columns or piles) to provide support (i.e., by extending structures into competent underlying units); (3) use subdrains in appropriate areas to avoid or reduce near-surface saturation; and (4) design for potential settlement of liquefiable materials through means such as use of post-tensioned foundations and/or flexible couplings for utility connections.

- Landslides/Slope Instability: (1) construct properly drained shear keys and/or replace susceptible deposits with manufactured buttress fills where appropriate; (2) employ applicable slope laybacks (i.e., shallower slopes) and/or structural setbacks; (3) incorporate structures such as retaining walls and stability fills where appropriate to provide support; and (4) implement proper slope drainage and landscaping where applicable per established regulatory/industry standards (e.g., IBC/CBC).

- Geologic and Soil Instability: (1) use standard efforts such as over-excavation and recompaction or replacement of unsuitable soils with engineered fill, and enhanced foundation design in applicable areas (e.g., post-tensioned or mat slab foundations); (2) use engineered fill, subdrains, surcharging (i.e., loading prior to construction to induce settlement) and/or settlement monitoring (e.g., through the use of settlement monuments) in appropriate areas; (3) implement groundwater withdrawal monitoring/restrictions per established legal/regulatory/industry standards (if applicable); and (4) remove unsuitable deposits and replace with non-corrosive fill, use corrosion-resistant construction materials (e.g., corrosion-resistant concrete and coated or non-metallic facilities), and install cathodic protection devices (e.g., use of a more easily corroded "sacrificial metal" to serve as an anode and draw current away from the structure to be protected) per established regulatory/industry standards (e.g., IBC/CBC).

- Expansive Soils: (1) replace and/or mix expansive materials with non-expansive fill; and (2) cap expansive soils in place with an appropriate thickness of non-expansive fill per established regulatory/industry standards (e.g., IBC/CBC).

4.6.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.6.5, all identified project-related impacts associated with geology and soils would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

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4.7 GREENHOUSE GAS EMISSIONS

This section describes impacts related to global climate change and greenhouse gases (GHG) that would be caused by implementation of the proposed project. The following discussion addresses the existing condition, regulatory settings, thresholds of significance, and assesses the impacts of GHG emissions during construction and operational activities as a result of the proposed project.

This PEIR is an informational document to inform decision-makers and the public of the potential environmental consequences of approving the proposed REGPA. This PEIR contains mitigation measures designed to help avoid or minimize significant environmental impacts from future development under the REGPA. A detailed description of the proposed project and project alternatives are contained in Section 3.0 and Section 6.0, respectively.

4.7.1 Existing Conditions

4.7.1.1 Greenhouse Effect and Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs because they capture heat radiated from the sun as it is reflected back into the atmosphere, similar to a greenhouse. Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, it is believed that emissions from human activities, such as electricity production and motor vehicles, have elevated the concentration of GHGs in the atmosphere and contributed to global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFC), hydrofluorocarbons (HFC), and water vapor (H_2O). Carbon dioxide is the reference gas for climate change. To account for the warming potential of GHGs, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). The effects of GHG emission sources (i.e., individual projects) are reported in metric tons (MT) of CO_2e per year.

4.7.1.2 Effects of Global Climate Change

- Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following (California Natural Resources Agency 2009):
- Average temperature increase is expected to be more pronounced in the summer than in the winter season.
- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer, and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- As GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are

projected to increase by an additional 1.8 to 5.4 degrees Fahrenheit (°F) (an increase one to three times as large as that which occurred over the entire 20th century).

- By 2100, the models project temperature increases between 3.6 and 9°F.

Changes to the global climate system would potentially affect California in the following ways:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (Intergovernmental Panel on Climate Change [IPCC] 2007).
- A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years (Climate Action Team [CAT] 2006).
- A rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps and the Greenland ice sheets (IPCC 2007).
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones (IPCC 2007).
- An increase in the number of days conducive to ozone formation by 25 percent to 85 percent (depending on future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century (CAT 2006).
- High potential for erosion of California's coastlines and sea water intrusion into delta and levee systems due to the rise in sea level (CAT 2006).

4.7.1.3 Greenhouse Gas Pollutants of Concern

Following are descriptions of the primary GHGs that are emitted from anthropogenic sources. Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Gases with high global warming potential, such as HFCs, PFCs, and SF_6, are the most heat-absorbent. Methane traps over 21 times more heat per molecule than CO_2, and N_2O absorbs 310 times more heat per molecule than CO_2. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Table 4.7-1 shows the global warming potential for different GHGs for a 100-year time horizon.

Table 4.7-1
GLOBAL WARMING POTENTIAL FOR GREENHOUSE GASES

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous Oxide (N_2O)	213
Hydrofluorocarbons (HFC), Perfluorocarbons (PFC)	6,500
Sulfur Hexafluoride (SF_6)	23,900

Source: California Climate Action Registry 2009

Carbon Dioxide

Carbon dioxide (CO_2) is a colorless, odorless gas that is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (USEPA 2011a).

Methane

Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of methane lifetime is about 12 years (USEPA 2011b).

Nitrous Oxide

Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor that is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (USEPA 2010a).

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

Hydrofluorocarbons (HFC) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products.

The atmospheric lifetime for HFC varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFC have atmospheric lifetimes less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (USEPA 2010b).

Perfluorocarbons (PFC) are colorless, highly dense, chemically inert, and nontoxic. Natural geological emissions have been responsible for the PFC that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (European Fluorocarbons Technical Committee 2003; USEPA 2010b).

Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment and the electric power industry uses roughly 80 percent of all SF_6 produced worldwide. Leaks can occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (USEPA 2010b).

4.7.1.4 Global and Statewide Greenhouse Gas Inventories

In the year 2011, total GHG emissions worldwide were estimated at 43,646 million metric tons (MMT) CO_2e (World Resources Institute 2014). The US contributed the second largest portion of GHG emissions (behind China) at 15 percent of global emissions. The total US GHGs were 6,526 MMT CO_2e in 2012 (USEPA 2014). On a national level, approximately 28 percent of GHG emissions were associated with transportation and about 32 percent were associated with electricity generation. In 2012, California produced a total of 459 MMT CO_2e (CARB 2014a). The transportation sector is the single largest category of California's GHG emissions, accounting for 37 percent of emissions statewide in 2012 (CARB 2014a).

4.7.1.5 Regulatory Framework

Federal Regulations

<u>Federal Clean Air Act</u>

The US Supreme Court ruled on April 2, 2007, in Massachusetts v. US Environmental Protection Agency that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) on September 15, 2009.

State Regulations

California Code of Regulations, Title 24, Part 6

CCR Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest Title 24 standards are anticipated to increase energy efficiency by approximately 40 percent compared to the 2005 Title 24 standards, thereby reducing GHG emissions from energy use by approximately 40 percent.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to year 1990 levels by the year 2020, and for an 80-percent reduction in GHG emissions by the year 2050. Executive Order S-3-05 also calls for the California Environmental Protection Agency (CalEPA) to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The first of these reports, "Scenarios of Climate Change in California: An Overview" (February 2006), concluded that, under the report's emissions scenarios, the impacts of global warming in California are anticipated to include, but are not limited to: public health, biology, rising sea levels, hydrology and water quality, and water supply.

Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. California needs to reduce GHG emissions by approximately 15.3 percent below CARB's latest business-as-usual (BAU) predictions to achieve this goal (CARB 2014b).

Assembly Bill 32 requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. On January 1, 2011, specific GHG emission limits and reduction measures in line with Assembly Bill 32 were adopted. As of October 31, 2011, 18 of 30 CARB regulations had been approved, including nine discrete early actions.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

In response to the transportation sector accounting for a substantial portion of California's CO_2 emissions, Assembly Bill 1493 (Pavley) was enacted on July 22, 2002. Assembly Bill 1493 requires CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation in the state manufactured in year 2009 or later. In setting these standards, CARB considered cost effectiveness, technological feasibility, and economic impacts. CARB adopted the standards in September 2004. When fully phased in, the near-term (years 2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the year 2002 fleet, while the midterm (years 2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions and hybrid electric drives. To set its own GHG emissions limits on motor vehicles, California had to receive a waiver from the USEPA. The USEPA approved the waiver in June 2009. With this action, it was expected in 2008 that the new regulations (Pavley I and II) would reduce GHG emissions from California passenger vehicles by about 18 percent statewide.

Executive Order S-01-07

This Executive Order, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to Assembly Bill 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. On December 29, 2011, District Judge Lawrence O'Neill in the Eastern District of California issued a preliminary injunction blocking CARB from implementing LCFS for the remainder of the Rocky Mountain Farmers Union litigation. The Ninth Circuit Court of Appeals (Ninth Circuit) lifted the injunction in April 2012, pending CARB's appeal of the federal district court ruling, and in September 2013, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause. Therefore, the LCFS enforcement injunction has been removed, and CARB is continuing to implement the LCFS statewide.

California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan (CARB 2008) as directed by Assembly Bill 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by Assembly Bill 32. Measures applicable to development projects include those related to: energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions. One of these is measure T-3, Regional Transportation-related Greenhouse Gas Targets, which relies on Senate Bill 375 implementation to reduce GHG emissions from passenger vehicles through reducing vehicle miles traveled. The other measures are related to vehicle GHGs, fuel and efficiency measures, and would be implemented statewide rather than on a project-by-project basis.

CARB recently released the First Update to the Climate Change Scoping Plan in May 2014 to provide updated information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession. The Scoping Plan's current estimate to attain the GHG emissions reduction goal of Assembly Bill 32 (i.e., 1990 levels by 2020) is 78 million metric tons of CO_2 equivalent (MMT CO_2e) (CARB 2014b). CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy, 23 MMT CO_2e for transportation, 5 MMT CO_2e for high-GWP, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

Senate Bill 1078, Governor's Order S-14-08, and Senate Bill 2X (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewable Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target.

Prior to the Executive Order, the PUC and CEC were responsible for implementing and overseeing the Renewables Portfolio Standards. The Executive Order shifted that responsibility to the CARB requiring them to adopt regulations by July 31, 2010. CARB is required by current law, Assembly Bill 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing GHG emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050.

In March 2011, Senate Bill 2X established S-14-08 as law passed the state's legislature. While Senate Bill 2X contains the same targets as Governor's Order S-14-08 (33 percent of their supply from renewable sources by 2020), as an executive order it did not have the force of law (Governor's Order can be reversed by future governors).

Local Regulations

Desert Renewable Energy Conservation Plan

The DRECP is a major component of California's renewable energy planning efforts. The plan strives to provide effective protection and conservation of desert ecosystems, while allowing for the appropriate development of renewable energy projects (DRECP 2014). The DRECP is a collaborative effort developed under the California Natural Community Conservation Planning Act (NCCPA), CESA, FESA, and FLPMA. Key goals include the identification and incorporation of climate change adaptation research, management objectives, and/or policies.

Great Basin Unified Air Pollution Control District

The GBUAPCD regulates air quality in the County according to the standards established in the CAA and amendments to those acts. The GBUAPCD regulates air quality through its permitting authority and through air quality-related planning and review activities over most types of stationary emission sources.

Inyo County General Plan

Although the General Plan (2001, as amended) does not currently include any goals, policies, or implementation measures specifically related to GHG emissions, the Conservation and Open Space Element was updated in 2014 with an Energy Efficiency chapter that contains several policies which indirectly address global climate change.

- Policy EE-1.2. The County will continue to evaluate energy use and reduction targets as a way to promote energy efficiency throughout the County and as a means to reduce operating costs.

- Policy EE-1.3. The County will continue to implement the action items identified in the 2012 Energy Action Plan to meet its overall energy reduction goals as long as those actions will result in savings to the County from reduced energy usage.

Energy Action Plan

An Energy Action Plan was prepared for the County in October 2012 with the purpose of outlining a strategy to reduce energy use and costs throughout the County. The plan establishes a long term vision for energy efficiency, identifies reduction goals and milestones, provides potential energy reduction policies and procedures, identifies County buildings that are highly energy efficient and County buildings that require improvements, and presents potential funding mechanisms for energy efficiency projects.

Inyo County Code Title 21: Renewable Energy Ordinance

The County adopted ICC Title 21, the Renewable Energy Ordinance, in 2010. The ordinance supports and encourages the responsible utilization of the County's natural resources, and encourages the use of clean, renewable energy sources. This ordinance focuses mainly on the use of wind and solar resources for alternative energy purposes.

4.7.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on climate change if it would result in any of the following:

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

- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

As discussed in Section 15064.4 of the State CEQA Guidelines, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Neither the

GBUAPCD nor the County has yet established specific quantitative significance thresholds for GHG emissions evaluated under CEQA.

In the absence of adopted local or statewide thresholds, the general methodology in this PEIR follows the interim guidance provided by the South Coast Air Quality Management District (SCAQMD). On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is the lead agency. The interim threshold consists of five tiers of standards that could result in a finding of less than significant impact. The tiers include CEQA exemptions, consistency with regional GHG budgets, less than significant screening levels for industrial projects (10,000 MT/year CO_2e) and commercial/residential projects (3,000 metric tons/year CO_2e), performance standards (i.e., 30 percent less than BAU), and carbon offsets (SCAQMD 2008). Although SCAQMD is not the lead agency for the proposed project, this analysis includes the use of the “Tier 3” quantitative thresholds for residential and commercial projects. The SCAQMD proposes that if a project generates GHG emissions below 3,000 metric tons/year of CO_2e, it could be concluded that the project’s GHG contribution is not “cumulatively considerable” and is therefore less than significant under CEQA. If the project generates GHG emissions above the threshold, the analysis must identify mitigation measures to reduce GHG emissions.

Because GHG emission reduction measures for construction equipment are relatively limited, SCAQMD, in its Draft Guidance Document – Interim CEQA GHG Significance Thresholds (Attachment E of Board Agenda No. 31 on the December 5, 2008 Governing Board), recommends that construction emissions be amortized over a 30-year project lifetime and considered to be an element of operational emissions (SCAQMD 2008).

4.7.3 Impact Analysis

The REGPA is part of the County’s efforts to support renewable energy development in the County. The policies contained in the REGPA will allow the development to take place within certain parameters which will provide opportunities for reducing statewide GHG emissions while protecting the County’s environment, economy, and culture. Indirectly, implementation of the individual projects would result in GHG emissions from construction and operation.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the ambient environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific GHG-related impacts against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the GHG analysis conducted for the project.

All issues related to global climate change and GHG emissions are, by definition, cumulative. As such, it is not necessary to discuss each SEDA and the OVSA individually for every GHG issue area. The following impact analysis has therefore been separated into discussions for each SEDA and the OVSA only when deemed appropriate.

4.7.3.1 Conformance to Greenhouse Gas Emissions Thresholds

Construction Impacts

The proposed project would result in construction-related GHG emissions generated by sources such as heavy-duty off-road equipment, trucks hauling materials, and worker commutes to and from construction sites. Construction emissions are temporary in nature, and are not expected to result in any appreciable long-term increase in ambient GHG levels. Construction GHG emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Because details regarding individual solar projects are unknown at this time (e.g., site design, equipment fleet, and measures to reduce GHG emissions), project-specific analyses will be necessary to ensure that potential emissions associated with construction comply with the interim SCAQMD GHG thresholds. Therefore, impacts would be considered potentially significant.

Operational Impacts

The proposed project would result in operational GHG emissions generated from direct and indirect emissions sources including mobile sources, electricity and water usage, and emissions generated during the potential treatment of wastewater. Mobile source emissions would be associated with activities such as vehicle travel required for operations and maintenance. Relatively small amounts of grid-provided electricity could be required for power. Water source emissions could be associated with panel washing activity. Consumption of water may result in indirect GHG emissions from electricity used to power any off-site conveyance, distribution, and treatment of water and associated wastewater.

As previously discussed, because details regarding individual solar projects are unknown at this time, project-specific analyses will be necessary to ensure that potential emissions associated with solar project operations comply with the interim SCAQMD GHG thresholds. Therefore, impacts would be considered potentially significant.

Greenhouse Gas Emissions Offset Benefits

The proposed project would encourage solar energy developments with a total allowable capacity of 900 MW of electricity under peak solar conditions (250 MW in the Western Solar Energy Group, 100 MW in the Southern Solar Energy Group, and 550 MW in the Eastern Solar

Energy Group). As shown below, using an average of six hours of sun per day, the maximum energy generated by the proposed project is estimated to be approximately 2,000 Gigawatts (GW) per year.

900 MW x 1 GW/1,000 MW x 6 sun hours/day x 365 days/year = 1,971 GW/year

This energy would replace the energy consumption provided by the burning of fossil fuels and the use of water at central power generation plants, thereby resulting in an indirect reduction of GHG emissions. According to the USEPA, GHG emission reductions would be calculated as follows (USEPA 2014):

GHG Reduction (MT CO_2e) = Average Capacity (MW) x Average Hours of Sun/Year x 1,000 kWh/MWh x Electricity Reductions Emission Factor

Where:

Maximum Capacity = 900 MW
Assumed Average Capacity = 75 percent of Maximum Capacity
Average Hours of Sun/Year = 6 hours/day x 365 days/year = 2,190 hours/year
Electricity Reductions Emissions Factor = 6.9×10^{-4} MT CO_2e/kWh reduced

Therefore:

GHG Reduction (MT CO_2e) = 900 MW x 0.75 x 2,190 hours/year x 1,000 kWh/MWh x 6.9×10^{-4} MT CO_2e/kWh reduced

GHG Reduction = 1,019,992.5 MT CO_2e

Based on the assumption that the project would be fully built out and that average capacity would be 75 percent of the maximum capacity, this calculation shows that the project could result in the offset of up to approximately 1 MMT CO_2e per year. This would result in a beneficial impact.

4.7.3.2 Consistency with Plans Adopted for the Purpose of Reducing Greenhouse Gas Emissions

The General Plan (2001, as amended) includes policies that indirectly address global climate change through the reduction of energy use. The proposed project would support the development of solar energy projects, which would provide renewable energy and could offset up to 1 MMT CO_2e per year. This reduction in GHG emissions would support the goals of the General Plan, as well as the goals of Assembly Bill 32 and the RPS. Additionally, as shown below, the proposed project includes a new General Plan policy to further address the reduction of GHG emissions through lowered water consumption.

Conservation and Open Space Element

New Water Resources Policy

- Policy WR-3.5: Sustainable Renewable Energy Solar Development. The County shall require Renewable Energy Solar Facility development to incorporate measures to minimize water consumption and use of potable water and encourage the use of reclaimed water and/or practices that do not require water during construction, the life of the facility, and during reclamation.

Therefore, the project would not conflict with plans adopted for the purpose of reducing GHG emissions and impacts would be less than significant.

4.7.4 Level of Significance before Mitigation

Based on the analyses in Section 4.7.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to daily threshold exceedances during construction and operation activities. These impacts require mitigation to reduce them to the maximum extent feasible. With regard to the project's consistency with plans adopted for the purpose of reducing GHG emissions, based on the analyses in Section 4.7.3.2, the project would be consistent and impacts would be less than significant. Small scale projects are typically considered to result in no impacts under CEQA.

4.7.5 Mitigation Measures

A GHG mitigation measure has been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to air quality. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measure shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof-top or ground mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact related to GHG emissions and would not require a project-specific GHG evaluation or implementation of the mitigation measure listed in this section. In such cases, the County shall document that no impacts related to GHG emissions will occur and no mitigation measures are necessary in lieu of the GHG evaluation required in Mitigation Measure GHG-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to result in impacts related to GHG emissions, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

The following mitigation measures are provided to address potentially significant GHG impacts.

MM GHG-1: Prepare site-specific technical greenhouse gas report.

Prior to approval of a Renewable Energy Permit, Renewable Energy Development Agreement, or Renewable Energy Impact Determination for a solar energy project, a site-specific technical GHG report will be prepared and approved by the County. The site-specific technical report will identify project-specific emissions to ensure compliance with the interim SCAQMD GHG thresholds, as well as measures to reduce operational greenhouse gas emissions. The technical report will be completed and approved by the County prior to the County's action.

4.7.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.7.5, all identified project-related impacts associated with global climate change and GHG emissions would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

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4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.1 Existing Conditions

4.8.1.1 Inyo County Hazardous Material Sites

Hazardous material use and disposal activities are routinely tracked and documented on numerous federal, state, and local databases. Two of the primary hazardous material database sites in the State of California are the SWRCB GeoTracker and CalEPA/Department of Toxic Substance Control (DTSC) EnviroStor (Government Code 65962.5/Cortese) lists. Preliminary review of the GeoTracker (SWRCB 2014) and EnviroStor (DTSC 2014) database sites identified nearly 300 listings within the County, with both sites including listings from multiple federal, state, and local sources (and additional information provided in Section 4.8.1.7). The noted listings include sites/facilities associated with uses such as underground storage tanks (UST), landfills, mining operations, military sites, industrial uses and commercial (e.g., dry cleaning and automotive service) establishments. While a number of these listings are identified as “inactive” or “case closed,” numerous active or “action required” cases are also present. A depiction of hazardous material/waste site locations within the County identified under the USEPA Re-Power Mapping Program is provided on Figure 4.8-1 including the following designations (Aspen 2014):

Abandoned Mine Land Sites – These locations include abandoned hard rock mining and processing sites listed in the USEPA National Priorities List and Comprehensive Environmental Response Compensation and Liability Information System databases (refer to Section 4.8.1.7 for additional information). As depicted on Figure 4.11-1 of this PEIR, numerous additional active and inactive mining-related activities are also mapped within the County by the USGS.

Landfill Sites – These sites include operating landfills and related transfer station facilities identified on lists maintained by the USEPA and the County.

Landfill Methane Outreach Program Sites – These locations encompass USEPA listings of active and inactive landfills that may be suitable for implementation of landfill gas (methane) recovery efforts.

DTSC Cleanup Program Sites – These locations include sites listed under the USEPA Brownfield Program that have been subject to cleanup activities under DTSC oversight, but that still encompass active land use restrictions. A brownfield site is land previously used for industrial or commercial uses that may be contaminated with low concentrations of hazardous wastes and has the potential to be reused once it is cleaned up.

Rural Desert Southwest Brownfields Coalition Sites – The Rural Desert Southwest Brownfields Coalition is a coalition of four Nevada counties and Inyo County focused on identifying brownfield sites that may be suitable for redevelopment as “clean economy” projects such as renewable energy or energy efficient technologies. One potential site has been identified within the County, and consists of the former PPG Industries salt extraction facility located along the west side of Owens Lake.

From the above discussion, hundreds of hazardous material/waste sites are documented within the County, with a summary of known and potential locations within the individual project areas provided below.

4.8.1.2 Project Area Hazardous Material Sites

Western Solar Energy Group

Laws Solar Energy Development Area

Based on the information provided on Figure 4.8-1, one DTSC site is located within or adjacent to the Laws SEDA western boundary, with a number of additional DTSC, landfill and mining-related sites located further to the west and southwest (mostly in the City of Bishop). A number of additional sites associated primarily with leaking underground storage tanks (LUSTs) are identified in the referenced GeoTracker and EnviroStor databases, including one LUST site located within the Laws SEDA and several additional sites located in nearby areas to the west and southwest. The on-site LUST location (109 Dehy Street, Laws, CA 93514) is identified as an active case with ongoing groundwater monitoring related to potential contamination from kerosene (SWRCB 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Laws SEDA in association with uses such as agricultural, commercial (e.g., service station) and industrial (e.g., mining) operations. Specifically, this could entail activities including fuel and chemical (e.g., pesticide) use/storage.

Owens Lake Solar Energy Development Area

The Owens lake SEDA includes three DTSC sites and the previously noted PPG Industries brownfield location. The DTSC sites include the Keeler Talc and Soda plants, as well as the Keeler Class III Landfill in the northwestern portion of the SEDA. The talc and soda plant sites are identified as inactive and requiring evaluation, while the landfill is an open case with ongoing monitoring (and no specific contaminates listed for any of these three sites, DTSC 2014). Several additional sites are also identified within or adjacent to the Owens Lake SEDA on the GeoTracker and EnviroStor databases, including two LUSTs and one site related to hydrocarbon contamination at an Air National Guard facility (SWRCB 2014; DTSC 2014). One of these on-site locations, a LUST at the previously described PPG Industries location, is identified as active, with no information on the associated contaminate(s) or affected media (i.e., soil and/or groundwater) (SWRCB 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Owens Lake SEDA in association with uses such as agricultural and industrial operations. Specifically, this could entail activities including fuel and chemical (e.g., pesticide) use/storage.

Rose Valley Solar Energy Development Area

One DTSC site, the inactive former Olancha Airfield, is mapped near the northern tip of the Rose Valley SEDA with no information on the associated contaminate(s) or affected media (SWRCB 2014). Several additional sites are also mapped to the west and north of the northern SEDA area (north of Sage Flats Road) on the GeoTracker and EnviroStor databases. These include three inactive LUSTs with no information on the associated contaminate(s) or affected media, and two permitted (non-leaking) USTs (SWRCB 2014; DTSC 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Rose Valley SEDA in association with uses such as commercial operations (e.g., service stations). Specifically, this could entail activities including fuel use and storage.

Pearsonville Solar Energy Development Area

While no DTSC sites are depicted within or adjacent to the Pearsonville SEDA, two sites are mapped within the SEDA on the GeoTracker list. Specifically, these include a permitted (non-leaking) UST at Pearsonville Shell along US 395 near the southern SEDA boundary, and the Sawmill Class III Landfill located in the northeastern portion of the SEDA between US 395 and the northernmost extent of Nine Mile Canyon Road (with no information on the associated contaminates or affected media at the mill site) (SWRCB 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Pearsonville SEDA in association with uses such as agricultural and commercial (e.g., service station) operations. Specifically, this could entail activities including fuel and chemical (e.g., pesticide) use/storage.

Owens Valley Study Area

Numerous DTSC, landfill and mining-related sites are mapped throughout the northern and southern portions of the OVSA. The DTSC sites include unspecified cleanup activities associated with the Manzanar Retention Center, Lone Pine Airport, former Mount Whitney Military Reservation, former Manzanar Airport, Camp Manzanar, Manzanar Recreation Area, Independence Warehouse, Independence Airport, Caltrans Maintenance Yard (Big Pine), Jorgensen Reduction Plant (Bishop), and Eastern Sierra Regional (Bishop) Airport. In addition, a number of other active and inactive (predominantly LUST) sites are mapped within the OVSA, mainly in the vicinity of Bishop, Big Pine, Independence and Lone Pine (SWRCB 2014; DTSC 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the OVSA in association with uses such as agricultural, commercial (e.g., service station) and industrial (e.g., mining) operations. Specifically, this could entail activities including fuel and chemical (e.g., pesticide) use/storage.

Southern Solar Energy Group

Trona Solar Energy Development Area

Two DTSC sites are mapped within or adjacent to the Trona SEDA with no additional sites identified in the SEDA or vicinity on the GeoTracker and EnviroStor databases (SWRCB 2014; DTSC 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Trona SEDA in association with uses such as airport operations (i.e., the on-site Trona Airport) and industrial uses (e.g., vehicle/ equipment storage). Specifically, this could entail activities including fuel use and storage.

A potential off-site transmission corridor has also been identified for the Trona SEDA, and would likely extend along SR 178 to an existing 115-kV transmission line located along US 395 near the City of Ridgecrest (in Kern County). While no known hazardous material sites are present within this corridor, some potential exists for the occurrence of undocumented hazardous material sites in association with uses such as roadway, industrial and agricultural operations.

Eastern Solar Energy Group

<u>Chicago Valley Solar Energy Development Area</u>

No DTSC sites are mapped within or adjacent to the Chicago Valley SEDA, and no additional sites are identified in the site vicinity on the GeoTracker and EnviroStor databases (SWRCB 2014; DTSC 2014). The closest mapped sites include a potential landfill methane recovery site, a permitted (non-leaking) UST and a LUST (designated as "case closed") near the Community of Shoshone to the south and southwest. In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Chicago Valley SEDA in association with uses such as vehicle and equipment use and storage (and related fuel spills/leaks).

A potential off-site transmission corridor has also been identified for the Chicago Valley SEDA, and extends generally east-northeast from the SEDA for approximately 19 miles to an existing 500-kV transmission line located along SR 160 in the State of Nevada. While no known hazardous material sites are present within this corridor, some potential exists for the occurrence of undocumented hazardous material sites in association with uses such as agricultural operations.

<u>Charleston View Solar Energy Development Area</u>

No DTSC sites are mapped within or adjacent to the Charleston View SEDA, and no additional sites are identified within the SEDA on the GeoTracker and EnviroStor databases (SWRCB 2014; DTSC 2014). Two LUST sites identified as "case closed" are listed just south of the southeastern Charleston View SEDA boundary on the GeoTracker and EnviroStor databases. These sites include the Tecopa Trading Post and Delight's Hot Spa, with both sites listed for gasoline contamination, the Tecopa Trading Post medium identified as soil, and no medium noted for the hot spa site (SWRCB 2014; DTSC 2014). In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Charleston View SEDA in association with uses such as vehicle and equipment use and storage (and related fuel spills/leaks).

A potential off-site transmission corridor has also been identified for the Charleston View SEDA, and extends generally northeast from the eastern SEDA boundary along Tecopa Road to an existing 500-kV transmission line located along US 160 in the state of Nevada (CEC 2012). While no known hazardous material sites are located within or adjacent to the described off-site transmission corridor, the previously described GeoTracker and EnviroStor databases are limited to the state of California. Some potential exists for the occurrence of hazardous material sites within the off-site corridor, due to the presence of development including roadway, power line and substation facilities.

<u>Sandy Valley Solar Energy Development Area</u>

No DTSC sites are mapped within or adjacent to the Sandy Valley SEDA, and no additional sites are identified in the site vicinity on the GeoTracker and EnviroStor databases (SWRCB 2014; DTSC 2014). The closest mapped sites include the Tecopa Landfill, an associated potential landfill methane recovery site and an unspecified DTSC site, all located 20 miles or more to the west. In addition to the sites noted above, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Sandy Valley SEDA in association with uses such as agricultural operations (e.g., pesticides) and vehicle and equipment use and storage (and related fuel spills/leaks).

4.8.1.3 Airports

There are seven general aviation/public airports currently operating within the County. According to the Inyo County Local Transportation Commission, there are also six private landing strips and "…at least one active backcountry airstrip…" within the County (Inyo County 2014). A summary of airport locations relative to the project areas is provided below and depicted on Figure 4.8-1.

Western Solar Energy Group

<u>Laws Valley SEDA</u> – The closest airport to the Laws SEDA is the Bishop Airport, located approximately one mile to the west.

<u>Owens Lake SEDA</u> – The closest airport to the Owens Lake SEDA is Lone Pine Airport, located approximately 4.3 miles to the north.

<u>Rose Valley SEDA</u> – The closest airport to the Rose Valley SEDA is the Lone Pine Airport, located approximately 21 miles to the north.

<u>Pearsonville SEDA</u> – The closest airports to the Pearsonville SEDA include the Inyokern Airport approximately 9 miles to the south, and the China Lake NAWS approximately 11.5 miles to the southeast (both of these airports are located outside of the County).

<u>Owens Valley Study Area</u> – Three of the noted general aviation airports, the Bishop, Independence and Lone Pine airports, are located within the northern, central and southern portions of the OVSA, respectively.

Southern Solar Energy Group

<u>Trona SEDA</u> – The Trona Airport, a private facility owned by the US Department of Interior, is located within the southeastern portion of the Trona SEDA. The closest off-site airport is the China Lake NAWS, located approximately 19 miles to the southwest.

Eastern Solar Energy Group

<u>Chicago Valley SEDA</u> – The closest airport to the Chicago Valley SEDA is the Shoshone Airport, located approximately five miles to the west. The previously described potential

transmission corridor could potentially extend within close proximity to a private airfield (Hidden Hills Airport), located approximately 17 miles to the east in the state of Nevada, depending on the final corridor location.

Charleston View SEDA – The closest airport to the Charleston View SEDA is the previously described Hidden Hills Airport, located approximately 1.1 miles to the northeast in the state of Nevada.

Sandy Valley SEDA – The closest airport to the Sandy Valley SEDA is the Sky Ranch Airport, a private facility located approximately 0.9 mile to the southeast in the state of Nevada.

The Inyo County Airport Land Use Commission adopted a *Policy Plan and Airport Comprehensive Land Use Plan (CLUP)* in 1991, pursuant to applicable state requirements. There has been no requirement to update the CLUP, although the County "…has prioritized the completion of Master Plans at each of the general aviation airports it maintains. Once the Master Plans are completed or there is a requirement to update the CLUP the County will pursue an update to the CLUP" (Inyo County 2014). Based on the noted information, there is no current update of the 1991 CLUP, although the ICC identifies Airport Hazard Overlay Zones in conformance with FAA requirements and related standard CLUP criteria (with additional information provided in Section 4.8.1.7).

4.8.1.4 Schools

A summary of schools located in proximity to the individual project areas is provided below.

Western Solar Energy Group

Laws Valley SEDA – The closest mapped school site to the Laws SEDA is Bishop Union High School, located approximately 3.5 miles to the west in the City of Bishop.

Owens Lake SEDA – The closest mapped school site to the Owens Lake SEDA is Lone Pine High School, located approximately 5.25 miles to the north in the Community of Lone Pine.

Rose Valley SEDA – The closest mapped school site to the Rose Valley SEDA is Lone Pine High School, located approximately 22 miles to the north in the Community of Lone Pine.

Pearsonville SEDA – The closest mapped school site to the Pearsonville SEDA is Inyokern Elementary, located approximately 11 miles to the south in the Community of Inyokern (and outside of the County).

Owens Valley Study Area – A number of schools are located in the OVSA, including the following: (1) Bishop Union Elementary School, Pine Street School, Bishop Union Elementary Community Day School, Home Street Middle School, Bishop Union High School and Cerro Coso Community College in the City of Bishop; (2) Big Pine Elementary School, Big Pine Middle School and Big Pine High School in the Community of Big Pine; (3) Palisade Glacier High School, located approximately two miles west of the Community of Big Pine; and (4) Warren E. Hanson Preschool, Lo-Inyo Elementary/Middle School, and Lone Pine High School in the Community of Lone Pine.

Southern Solar Energy Group

Trona SEDA – The closest mapped school site to the Trona SEDA is Trona High School, located approximately 1.6 miles to the south in the Community of Trona.

Eastern Solar Energy Group

Chicago Valley SEDA – The closest mapped school site to the Chicago Valley SEDA is Death Valley High Academy, located approximately 4.8 miles to the west in the Community of Shoshone.

Charleston View SEDA The closest mapped school site to the Charleston View SEDA is Floyd Elementary School, located approximately 5 miles to the north in the state of Nevada.

Sandy Valley SEDA – The closest mapped school site to the Sandy Valley SEDA is Keystone Academy High School, located approximately 1.5 miles to the east in the state of Nevada.

4.8.1.5 Emergency Response/Evacuation Plans

The County Environmental Health Services Department (EHSD) implements a Hazardous Materials Area Plan (HMAP) , which provides direction to EHSD, other agencies and businesses, and the general public regarding appropriate actions and responses in the event of a release or threatened release of hazardous materials (Inyo County 2008). The primary objectives of the HMAP include efforts to:

- Save lives, reduce injuries, and minimize property/environmental damage in the event of an incident involving hazardous materials.
- Describe the pre-emergency preparations, concept of operations, organization, Scene Management System, protective actions and supporting systems required to implement the HMAP.
- Promote a coordinated and integrated response to hazardous materials incidents.
- Define roles and responsibilities of participating departments and agencies.
- Identify lines of authority and coordination when this plan is activated.
- Confine the effects of an immediate hazardous materials incident by guarding against its extension or the occurrence of secondary incidents.
- As part of the strategy to meet the noted objectives, the HMAP identifies the following primary and alternate emergency evacuation routes within the County:

Primary Evacuation Routes – Primary evacuation routes in the County consist of the major streets and highways within the County, as well as the interstate freeway system and state routes.

Alternate Evacuation Routes – Alternate evacuation routes in the County also include major surface streets, with the best routes to be determined at the time of the incident based on site and event-specific conditions (e.g., wind, traffic, population and the nature/location of the emergency event).

Based on the HMAP descriptions, evacuation routes within the County would include (but not necessarily be limited to) US 395 and 6, and SR 168, 136, 190, 127 and 178. All of these roadways are located within ROW corridors that restrict encroachment by facilities or activities that would impede roadway operations. Any such encroachment related to project construction or maintenance activities (e.g., for drainage crossing structures) would be required to obtain authorization (e.g., encroachment permits) from the associated management agency (e.g., Caltrans), with related standard remedial measures (e.g., use of flaggers and guide vehicles), and/or to provide alternate routes to ensure the maintenance of adequate traffic operations (refer to Section 4.8.1.7 for additional information).

4.8.1.6 Wildfire Hazards and Responsibilities

The California Department of Forestry and Fire Protection (CAL FIRE) generates statewide fire hazard ratings (identified as Fire Hazard Severity Zones), with much of the County rated as moderate or high (CAL FIRE 2014). CAL FIRE also designates areas of primary financial responsibility for preventing and suppressing fires, including Federal Responsibility Areas (FRA), State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). Figure 4.8-2 identifies Fire Hazard Severity Zones in SRAs, and also identifies areas of federal and local responsibility for fire protection. A summary of fire hazard ratings and responsibility designations for the individual project areas is provided below:

Western Solar Energy Group

Laws Valley SEDA – The Laws SEDA includes areas rated as moderate and high for fire hazards, and encompasses both FRAs and SRAs.

Owens Lake SEDA – The Owens Lake SEDA is rated as moderate for fire hazards in most areas (including much of the lake bed), with portions of the SEDA periphery assigned a high fire hazard. The majority of the Owens Lake SEDA is within an SRA designation, with areas along the western and eastern boundaries designated as FRA.

Rose Valley SEDA – Portions of the northern Rose Valley SEDA (southeast of Olancha) are assigned a high fire hazard rating, with the remainder of the SEDA designated as moderate. The Rose Valley SEDA includes areas designated as FRA, SRA and LRA.

Pearsonville SEDA – The Pearsonville SEDA is rated as moderate for fire hazards, and includes LRA and SRA designations.

Owens Valley Study Area – The OVSA exhibits primarily high fire hazard ratings, with minor areas of very high and moderate ratings. Most of the OVSA is designated as SRA, with relatively large areas of FRA and minor LRAs.

Southern Solar Energy Group

Trona SEDA – The Trona SEDA is rated as moderate for fire hazards and includes LRAs and FRAs.

Eastern Solar Energy Group

Chicago Valley SEDA – The Chicago Valley SEDA is rated as moderate for fire hazards, and includes LRAs and FRAs.

Charleston View SEDA – The Charleston View SEDA is rated as moderate for fire hazards and includes LRAs and FRAs.

Sandy Valley SEDA – The Sandy Valley SEDA is rated as moderate for fire hazards and is primarily within an LRA (with minor areas of FRA in the southeastern corner of the SEDA).

4.8.1.7 Regulatory Framework

Federal Regulations

Resource Conservation and Recovery Act of 1976

Federal hazardous waste laws are largely promulgated under the Resource Conservation and Recovery Act (RCRA; 40 CFR, Part 260), as amended by the Hazardous and Solid Waste Amendments of 1984 (which are primarily intended to prevent releases from LUSTs). These laws provide for the "cradle to grave" regulation of hazardous wastes. Specifically, under RCRA any business, institution or other entity that generates hazardous waste is required to identify and track it from the point of generation until it is recycled, reused or disposed of. The USEPA has the primary responsibility for implementing RCRA, although individual states are encouraged to seek authorization to implement some or all RCRA provisions (with California an authorized RCRA state as described in Section 4.8.1.7).

Hazardous Material Transportation Act

The US Department of Transportation regulates hazardous materials transportation under 49 CFR, which requires the US Department of Transportation's Office of Hazardous Materials Safety to generate regulations for the safe transportation of hazardous materials. The California Highway Patrol and Caltrans are the State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. These agencies also govern permitting for hazardous materials transportation within the state.

Comprehensive Environmental Response, Compensation, and Liability Act

The 1980 Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund, provides federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Federal actions related to the Superfund are limited to sites on the National Priorities List for cleanup activities, with the listings based on the USEPA Hazard Ranking System which is a numerical ranking system used to screen potential sites based on criteria such as the likelihood and nature of hazardous material release, and the potential to affect people or environmental resources. The Superfund was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986 as outlined below.

Superfund Amendments and Reauthorization Act

SARA is intended primarily to address the emergency management of accidental releases, and to establish state and local emergency planning committees responsible for collecting hazardous material inventory, handling and transportation data. Specifically, under Title III of SARA, a nationwide emergency planning and response program established reporting requirements for businesses that store, handle or produce significant quantities of hazardous or acutely toxic substances as defined under federal laws. Title III of SARA also requires each state to implement a comprehensive system to inform federal authorities, local agencies and the public when significant quantities of hazardous or acutely toxic substances are stored or handled at a facility. These data are made available to the community at large under the "right-to-know" provision, with SARA also requiring annual reporting of continuous emissions and accidental releases of specified compounds.

Federal Aviation Administration Technical Guidance for Evaluating Selected Solar Technologies on Airports (FAA Solar Guide)[1]

The FAA Solar Guide (FAA 2010) identifies the following procedures for reviewing solar projects:

Chapter 1 provides an introduction to solar electricity and how it is delivered to customers. This includes a description of solar PV, one of the more practical applications for airports, along with other types of solar energy systems, how systems connect and operate with the electric grid, and the specific electricity supply and demand issues associated with solar projects at airport.

Chapter 2 reviews airport site planning issues, including the life cycle of a typical solar PV project, project participants, and airport planning considerations for locating solar facilities at airports (e.g., Airport Layout Plan consistency).

Chapter 3 examines the regulatory issues that FAA must consider, including 77 CFR, Title 14 (Airspace Review), and obligations under NEPA.

Chapter 4 describes financial considerations for solar projects, including government incentives available to fund projects and how different ownership models (e.g., public versus private) can maximize project cost-effectiveness.

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[1] As of September 2014, the FAA website notes that "…the FAA is reviewing multiple sections of the *Technical Guidance for Evaluating Selected Solar Technologies on Airports* based on new information and field experience, particularly with respect to compatibility and glare. All users of this guidance are hereby notified that significant content in this document may be subject to change, and the FAA cautions users against relying solely on this document at this time.

Chapter 5 reviews the role of the federal government in solar development, including recommendations for future research and procedural efficiency.

State Regulations

California Code of Regulations

Most state and federal regulations and requirements that apply to generators of hazardous waste are codified in CCR Title 22, Division 4.5. Title 22 contains detailed compliance requirements for hazardous waste generation, transport, treatment, storage and disposal facilities. Because California is a fully authorized state under RCRA, most RCRA regulations are integrated into CCR Title 22. CalEPA/DTSC regulates hazardous waste more stringently than the USEPA, however, with CCR Title 22 therefore not including as many exemptions or exclusions as the equivalent federal regulations. Similar to the California Health and Safety Code (as outlined below), CCR Title 22 also regulates a wider range of waste types and waste management activities than RCRA. The State has also compiled a number of regulations from various CCR titles related to hazardous materials, wastes and toxics into CCR Title 26 (Toxics), and provides additional related guidance in CCR Title 23 (Waters) and CCR Title 27 (Environmental Protection), although California hazardous waste regulations are still commonly referred to as CCR Title 22.

Title 24 of the CCR provides a number of requirements related to fire safety, including applicable elements of CBC Part 2; Part 2.5, the California Residential Code; and Part 9, the California Fire Code. Specifically, CBC Chapter 7 (Fire and Smoke Protection Features) includes standards related to building materials, systems and assembly methods to provide fire resistance and prevent the internal and external spreading of fire and smoke (such as the use of non-combustible materials and fire/ember/smoke barriers). California Fire Code Chapter 9 (Fire Protection Systems) provides standards regarding when fire protection systems (such as alarms and automatic sprinklers) are required, as well as their design, installation and operation. The California Fire Code also establishes minimum standards to safeguard public health and safety from hazards including fire in new and existing structures. Specifically, this includes requirements related to fire hazards from building use/occupancy (e.g., access for fire-fighting equipment/personnel and provision of water supplies), the installation or alteration/removal of fire suppression or alarm systems, and the management of vegetative fuels and provision of defensible space. Section R327 of the California Residential Code includes measures to identify Fire Hazard Severity Zones and assign agency responsibility (i.e., federal, State, and local responsibility areas), and provides fire-related standards for building design, materials and treatments.

California Health and Safety Code

The CalEPA/DTSC has established rules governing the use of hazardous materials and the management of hazardous wastes. California Health and Safety Code Section 25531, et seq., incorporates the requirements of SARA and the Federal CAA as they pertain to hazardous materials. Under the California Accidental Release Prevention Program (CalARP, California Health and Safety Code Section 25531 to 25545.3), certain businesses that store or handle more than 500 pounds, 55 gallons or 200 cubic feet (for gases) of acutely hazardous materials at their facilities are required to develop and submit a Risk Management Plan to the appropriate local authorities, the designated local administering agency and the USEPA for review and approval. The Risk Management Plan is intended to satisfy federal "right-to-know" requirements and provide basic information to regulators and first responders, including identification and quantification of regulated substances used or stored on site, operational and safety mechanisms in place (including employee training), potential on- and off-site consequences of a release and emergency response provisions.

Under California Health and Safety Code Section 25500-25532, businesses handling or storing certain amounts of hazardous materials are required to prepare a Hazardous Materials Business Emergency/Contingency Plan (HMBEP), which includes an inventory of hazardous materials stored on site (above specified quantities), an emergency response plan, and an employee training program. An HMBEP is a written set of procedures and information created to help minimize the effects and extent of a release or threatened release of a hazardous material. An HMBEP must be prepared prior to facility operation, with updates and amendments required for appropriate circumstances (e.g., changes in business location, ownership or pertinent operations).

Pursuant to California Health and Safety Code Chapter 6.11, CalEPA established the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which consolidated a number of existing state programs related to hazards and hazardous materials. The Unified Program also allows agencies designated as a Certified Unified Program Agency to implement associated state regulations within their jurisdiction. For businesses within the County, HMBEPs are submitted to and approved by the County EHSD, which is the local Certified Unified Program Agency as outlined below under County requirements.

Division 12 (Fires and Fire Protection) of the California Health and Safety Code provides a number of standards related to fire protection methods, including requirements for management of vegetation comprising a potential fire hazard under Part 5, Chapters 1 through 3.

Investigation and Cleanup of Contaminated Sites

The oversight of hazardous materials release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary state agencies responsible for issues pertaining to hazardous material release sites. Investigation and remediation activities that would involve potential disturbance or release of hazardous materials must comply with applicable federal, state, and local hazardous materials laws and regulations. DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. These regulations would be applied during grading activities if, for example, previously unknown underground tanks or other potential contaminant sources were uncovered. As previously described, the DTSC and SWRCB (which oversees the RWQCBs) maintain database listings for hazardous material sites within the state (i.e., the GeoTracker and EnviroStor lists).

Hazardous Materials Transportation

As noted above under federal guidelines, CHP and Caltrans are the state enforcement agencies for hazardous materials transportation regulations. Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling and shipping regulations.

State Aeronautics Act (Public Utilities Code Section 21670, et seq.)

The Public Utilities Code (PUC) establishes requirements for the creation of airport land use commissions in every county with an airport served by a scheduled airline. Additionally, these sections of the Code mandate the preparation of CLUPs to provide for the orderly growth of public airports and the surrounding areas. Specific CLUP goals include providing airport safety guidelines, protecting the general public and ensuring the welfare of inhabitants in the airport vicinity.

California Department of Forestry and Fire Protection – State Responsibility Areas System

Legislative mandates passed in 1981 (SB 81) and 1982 (SB 1916) require CAL FIRE to develop and implement a system to rank fire hazards in California. Areas are rated as moderate, high or very high based primarily on the assessment of different fuel types. Non-federal lands outside cities that are covered wholly or in part by timber, brush, undergrowth or grass (for which the state has the primary financial responsibility of preventing and suppressing fires, per PRC Section 4125) are referred to as SRAs (with a summary of mapped fire hazards within County SRAs provided on Figure 4.14-1 of this PEIR). As previously described, the state also identifies areas under federal and local responsibility (FRAs and LRAs).

County Regulations

Inyo County Environmental Health Services Department

As noted above under State Regulations, the County EHSD is the local Certified Unified Program Agency, and has jurisdiction over HMBEPs in the County. The EHSD provides detailed guidelines for the preparation and implementation of HMBEPs, including direction on covered businesses/materials, storage/safety criteria, spill prevention/mitigation, emergency/contingency response requirements and exemptions.

Inyo County General Plan

Public Safety Element

Section 9.5, Wildfire Hazard, in the Public Safety Element of the County General Plan (2001, as amended) identifies a number of potential issues related to wildfire hazards, including associated risks to public safety and property. The principal goal identified to address these concerns, Goal WF-1, is to "Prevent wildfires and provide public safety from wildfire hazards." Several associated policies and implementation measures are applicable to the proposed project, as summarized below.

- Policy WF-1.1: Fire Protection Agencies. This policy is intended to support the expansion of fire protection agencies and volunteer fire departments, and to maintain cooperation with regulatory agencies and private landowners to provide greater fire protection within the County. Associated implementation measures include efforts to: (1) coordinate with fire agencies and work to establish additional fire protection organizations; and, (2) work with local fire districts and volunteer fire departments to identify appropriate service levels and achievement methods.

- Policy WF-1.2: Limitations in Fire Hazard Zones. This policy is intended to discourage development in high fire hazard zones. Associated implementation measures include efforts to: (1) maintain a current fire hazards map based on input from CAL FIRE and local fire districts; (2) require appropriate structure setbacks and fuel modification zones; and, (3) review development plans and provide recommendations regarding fire prevention and protection (e.g., access, sprinkler and water pressure requirements).

- Policy WF-1.3: Fuel Modification. This policy requires that fuel modification be implemented for structures within fire hazard zones. Associated implementation measures are the same as Nos. 1 and 2 identified above for Policy WF-1.2.

- Policy WF-1.4: Public Education/Notification. This policy provides for public education regarding wildfire hazards and related hazard reduction methods. The associated implementation policy involves generating guidance on appropriate fuel modification criteria for public distribution.

- Policy WF-1.5: Emergency Access. This policy notes that all County public roads shall be developed and maintained at adequate standards to provide safe circulation for emergency equipment. The associated implementation policy is the same as No. 3 identified above for Policy WF-1.2.

Land Use Element

Section 4.2, Land Use, in the Land Use Element of the County General Plan (2001, as amended) identifies potential issues related to potential hazards associated with industrial uses. The principal goal identified to address these concerns, Goal LU-4, is to "Provide appropriate types of industrial land uses that adequately serve the existing and/or future needs of the community and surrounding environs, and to promote and attract forms of non-polluting light industry." The associated policy that is applicable to the proposed project is summarized below.

- Policy LU-4.1: Light Industrial Designation. This policy is intended to provide for industrial and similar/compatible uses within the County where there are no significant air, odor, water, visual or hazard issues. No associated implementation measures are identified in the Land Use Element for the stated policy.

Circulation Element

Section 7.2, Roadways and Highways, in the Circulation Element of the County General Plan (2001, as amended) identifies a number of potential issues related to maintaining an effective roadway system. The principal goal identified to address these concerns, Goal RHI-1, is to provide "A transportation system that is safe, efficient, and comfortable, which meets the needs of people and goods and enhances the lifestyle of the County's residents." The associated policy and implementation measures that are applicable to the proposed project are summarized below.

- Policy RH-1.1: Prioritize Maintenance, Rehabilitation, and Reconstruction. This policy is intended to prioritize the maintenance, rehabilitation, and reconstruction of the existing highway and roadway system to protect public safety. Associated implementation measures include efforts to: (1) develop a priority list for roadway system maintenance, rehabilitation and reconstruction; (2) surface treat roads every 10 years, and repave roads every 20 years; and (3) coordinate with Caltrans on roadway system maintenance at locations with joint jurisdiction.

- Policy RH-1.5: Proper Access. This policy includes efforts to provide and maintain appropriate access on the County roadway system. Associated implementation measures include efforts to: (1) require an adequate evaluation of potential impacts to roadway facilities from development, and implement associated measures to ensure proper roadway system operation; and (2) consider emergency access requirements associated with proposed development.

Section 7.7, Aviation, in the Circulation Element of the County General Plan (2001, as amended) identifies a number of potential issues related to aviation. The principal goal identified to address these concerns, Goal AVI-1, is to "Enhance airports in the County to meet changing needs and demands." The associated policy and implementation measures that are applicable to the proposed project are summarized below.

- Policy AVI-1.2: Land Use Compatibility. This policy is intended to promote land use compatibility between airports and the surrounding environments. Associated implementation measures include efforts to: (1) adopt the Policy Plan and Airports Comprehensive Land Use Plan's recommendations and policies to promote land use and noise compatibility for the seven public use airports in the County; and (2) ensure consistency between County/local planning documents and airport land use plans.

<u>Airport Hazard Overlay Ordinance (Ord. 943 § 4, 1994)</u>

Pursuant to Title 18, Chapter 18.62, Section 18.62.020 (Surfaces and Zone), the following requirements are identified for airport hazard (AH) designations:

The AH overlay district consists of five surfaces and one zone for the purpose of airport zoning. Each of the surfaces as defined in this section and as depicted on the zoning map establish the height limitations necessary to accomplish the intent of the AH overlay district. The surfaces and zone of the AH district are as follows:

A. Primary Surface. The primary surface is a surface longitudinally centered on the runway. When the runway has a specifically prepared hard surface, the primary surface extends 200 feet beyond each end of the runway; but when the runway has no specially prepared hard surface, the primary surface ends at each end of that runway. The elevation of any point of the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is 250 feet for all runways at all airports except for the non-precision runways at Bishop and Lone Pine Airports where the width is 500 feet.

B. Approach Surface. The approach surface is a surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end. The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of 1,250 feet, at 5,000 feet in length with an approach slope of 20:1, for that end of all runways at all public use airports in Inyo County, except for those non-precision instrument runways at Bishop and Lone Pine Airports where the approach surface expands uniformly, from the primary surface, to a width of 3,500 feet, at 10,000 feet in length with an approach slope of 34:1.

C. Transition Surface. These surfaces extend outward and upward at right angles to the runway center line and the runway centerline extended at a slope of 7:1 from the sides of the primary surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

D. Horizontal Surface. The horizontal surface is a horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is 5,000 feet for all runways in Inyo County except for those non-precision runways at Bishop and Lone Pine Airports where the radius of each arc is 10,000 feet.

E. Conical Surface. The conical surface is a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

F. Runway Protection Zone. The runway protection zone is the land area which lies under the approach surface from the end of the primary surface for a distance of 1,000 feet for all runways at all public use airports in Inyo County, except for those non-precision runways at Bishop and Lone Pine Airports where the distance is 1,700 feet.

4.8.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on geology and soils if it would result in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

- Be located on a site which is included on a list of hazardous materials sites and, as a result, would create a substantial hazard to the public or the environment;

- For a project within the vicinity of an airport land use plan or, where such a plan has not been adopted within two miles of a public airport or public use airport, result in a safety hazard for people residing in the project area;

- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the vicinity of the project area;

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or wastes within one-quarter mile of an existing or proposed school;

- Physically interfere with an adopted emergency response plan or emergency evacuation plan; or,

- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.8.3 Impact Analysis

The REGPA is designed to minimize impacts regarding hazards and hazardous materials by constraining renewable energy development within the County in conjunction with the General Plan's existing policies regarding such resources. Indirectly, individual future projects have the potential to result in impact regarding hazards and hazardous materials.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment and would use greater quantities of potentially hazardous materials due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific hazards and hazardous materials impacts against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the hazards and hazardous materials analysis conducted for the project.

4.8.3.1 Western Solar Energy Group

Laws Solar Energy Development Area

Hazardous Materials

Hazardous Material Sites

The Laws SEDA includes one mapped DTSC site and one documented LUST (SWRCB 2014), with a number of other nearby DTSC, landfill, mining and LUST sites. In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Laws SEDA in association with uses such as agricultural, commercial and industrial operations. Hazardous material sites are generally not anticipated to substantially affect on-site solar facility implementation and operation, based on the nature and extent of the proposed development. Specifically, development within the 11,655-acre Laws SEDA would include facilities such as solar arrays, a substation, access roads, and related structures and infrastructure on up to 120 acres (or approximately one percent of the total SEDA area). Accordingly, project development would include opportunities to avoid or address potential hazardous material issues (e.g., by locating project facilities outside, or up-gradient of, known hazardous material locations). Because the exact nature and location of the noted facilities have not been identified, however, as well as the fact that potential exists for currently unknown hazardous material sites as previously noted, associated site-specific impacts cannot be determined at this time and are considered potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails completion of site-specific Environmental Site Assessment (ESA) analyses for proposed development to evaluate potential impacts and identify associated remedial measures.

Operational Hazardous Materials

Depending on the nature and extent of solar facilities and operations, the transport, use/storage and disposal of hazardous materials may be required, potentially including substances such as fuels, hydraulic and dielectric[2] fluids, oil and grease, cleaning solutions/solvents, and storage batteries. While the exact nature and location of proposed facilities have not been identified as previously noted, the transport, use/storage and disposal of hazardous materials (including activities associated with facility closure and decommissioning) would be subject to applicable federal, state, and local regulatory requirements as outlined above in Section 4.8.1. Required conformance with hazardous material regulatory standards, regardless of the ultimate nature and

[2] Dielectric fluids are typically used for thermal insulation, and may include substances such as various oils and glycerol.

extent of solar development/operation, would address associated issues related to public and environmental hazards through efforts such as implementation of approved HMBEPs, Risk Management Plans and related efforts (e.g., proper inventory documentation, storage/ containment, transport, employee training, and spill response/clean-up measures). Based on mandatory conformance with associated regulatory standards as described, potential hazardous material impacts related to solar facility operation at the Laws SEDA would be less than significant.

Airport-related Hazards

The Laws SEDA is located approximately one mile from the Bishop Airport at its closest point. While project development within the Laws SEDA would be limited to approximately one percent of the total SEDA area as previously noted, the exact nature and location of the noted facilities have not been identified. Accordingly, solar facilities could potentially result in safety hazards related to placement of structures such as towers and solar arrays within airport hazard zones, depending on their nature and location. As a result, associated potential impacts would be significant and related mitigation is identified below in Section 4.8.5 to address these potential hazards. Specifically, this mitigation entails completion of a site-specific Airport Safety Investigation for proposed development to evaluate potential impacts and identify associated remedial measures.

School-related Hazards

Because the Laws SEDA is located approximately 3.5 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Laws SEDA include US 395 and 6 (which extends through the SEDA), as well as SR 168. One or more of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

While the specific nature and location of proposed facilities within the Laws SEDA are not currently known as previously described, it is assumed that project solar development would not be located within roadway ROW. In addition, any construction-related encroachments into roadway ROW (e.g., for drainage facilities) would require authorization from the associated management agency (e.g., Caltrans), with related standard remedial measures to address traffic control and the maintenance of through lanes (e.g., use of flaggers and guide vehicles), and/or to provide alternate routes. Based on the noted considerations, as well as the short-term/temporary nature of potential encroachment, potential impacts to emergency evacuation routes from project-related construction activities would be less than significant.

Wildfire Hazards

As described in Section 4.8.1, the Laws SEDA includes areas rated as moderate and high for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential hazards, and mitigation entails completion of a site-specific Wildfire Safety Investigation for proposed development to evaluate potential wildfire impacts and identify associated remedial measures.

Owens Lake Solar Energy Development Area

<u>Hazardous Materials</u>

Hazardous Material Sites

The Owens Lake SEDA includes three mapped DTSC sites, the PPG Industries brownfield location and several additional documented (e.g., LUST) sites (SWRCB 2014). In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Owens Lake SEDA in association with uses such as agricultural and industrial operations. Potential impacts related to hazardous material sites for the Owens Lake SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 900 acres within the 89,247-acre SEDA (or approximately one percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Owens Lake SEDA are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

Because the Owens Lake SEDA is located approximately 4.3 miles from the closest airport, associated potential impacts related to airport hazards would be less than significant.

School-related Hazards

Because the Owens Lake SEDA is located approximately 5.25 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Owens Lake SEDA include US 395 and SR 136 and 190 (with portions of all three roadways extending into the SEDA). One or more of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Owens Lake SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Wildfire Hazards

As described in Section 4.8.1, the Owens Lake SEDA includes areas rated as moderate and high for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Rose Valley Solar Energy Development Area

<u>Hazardous Materials</u>

Hazardous Material Sites

The Rose Valley SEDA includes one mapped DTSC site, with several additional documented (e.g., LUST) sites in adjacent off-site areas (SWRCB 2014). In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Rose Valley SEDA in association with uses such as commercial operations. Potential impacts related to hazardous material sites for the Rose Valley SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 24,644-acre SEDA (or approximately 2.5 percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Rose Valley SEDA are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

Because the Rose Valley SEDA is located approximately 21 miles from the closest airport, associated potential impacts related to airport hazards would be less than significant.

School-related Hazards

Because the Rose Valley SEDA is located approximately 22 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Rose Valley SEDA include US 395 and SR 190 (with portions of both roadways extending into the SEDA). One or both of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Rose Valley SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Wildfire Hazards

As described in Section 4.8.1, the Rose Valley SEDA includes areas rated as moderate and high for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Pearsonville Solar Energy Development Area

<u>Hazardous Materials</u>

Hazardous Material Sites

The Pearsonville SEDA includes two listed hazardous material sites (SWRCB 2014). In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Pearsonville SEDA in association with uses such as agricultural and commercial operations. Potential impacts related to hazardous material sites for the Pearsonville SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 4,469-acre SEDA (or approximately 13.5 percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Pearsonville SEDA are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

Because the Pearsonville SEDA is located approximately 9 miles from the closest airport, associated potential impacts related to airport hazards would be less than significant.

School-related Hazards

Because the Pearsonville SEDA is located approximately 11 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation route in the vicinity of the Pearsonville SEDA is US 395, which extends through the SEDA. This roadway would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Pearsonville SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Wildfire Hazards

The Pearsonville SEDA is rated as moderate for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Owens Valley Study Area

<u>Hazardous Materials</u>

Hazardous Material Sites

The OVSA includes numerous mapped DTSC-, landfill-, and mining-related sites, as well as a number of active and inactive (primarily LUST) sites listed on the GeoTracker and EnviroStor databases (SWRCB 2014; DTSC 2014). In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the OVSA in association with uses such as agricultural, commercial and industrial operations. Potential impacts related to hazardous material sites for the OVSA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 1,500 acres within the 369,824 acre OVSA (or less than 0.5 percent of the OVSA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in

Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials in the OVSA are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

Three general aviation airports, the Bishop, Independence, and Lone Pine airports are located within the OVSA. While potential project-related development would be limited to less than one percent of the OVSA as noted above, the exact nature and location of this development have not been identified. As a result, associated site-specific effects from airport-related hazards would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

School-related Hazards

Numerous school sites are present within the OVSA, with most located in the City of Bishop and the communities of Big Pine and Lone Pine. While potential project-related development would be limited to less than one percent of the OVSA as noted above, because the exact nature and location of this development have not been identified, the associated site-specific effects to schools from the use or emission of hazardous materials or wastes would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails completion of site-specific School Safety Investigations for proposed development to evaluate potential impacts and identify associated remedial measures.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the OVSA include US 395 and US 6, as well as SR 168, SR 136 and SR 190 (all of which extend into or through the OVSA). One or more of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the OVSA would be less than significant, for similar reasons as described above for the Laws SEDA.

Wildfire Hazards

As described in Section 4.8.1, the OVSA includes areas rated as moderate, high and very high for wildfire hazards by CAL FIRE. The occurrence of wildfires within the OVSA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

4.8.3.2 Southern Solar Energy Group

Trona Solar Energy Development Area

<u>Hazardous Materials</u>

Hazardous Material Sites

The Trona SEDA includes two mapped DTSC sites. In addition, some potential exists for the occurrence of undocumented hazardous material sites within or adjacent to the Trona SEDA and the associated off-site transmission corridor in association with uses such as airport operations, agricultural use, and equipment/vehicle storage. Potential impacts related to hazardous material sites for the Trona SEDA and the associated off-site transmission corridor are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 4,550-acre SEDA (or approximately 13.2 percent of the total SEDA area). Because the exact nature and location of this development and the associated off-site transmission corridor have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Trona SEDA and the associated off-site transmission corridor are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

The Trona Airport is located within the southeastern portion of the Trona SEDA (and likely in close proximity to the associated off-site transmission corridor). While potential project-related development would be limited to approximately 13 percent of the SEDA as noted above, because the exact nature and location of this development have not been identified, the associated site-specific effects from airport-related hazards would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

School-related Hazards

Because the Trona SEDA is located approximately 1.6 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation route in the vicinity of the Trona SEDA is SR 178, which extends through the SEDA. This roadway would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Trona SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Wildfire Hazards

The Trona SEDA is rated as moderate for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA and the associated off-site transmission corridor could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

4.8.3.3 Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

<u>Hazardous Materials</u>

Hazardous Material Sites

No mapped or listed hazardous material sites are located within or adjacent to the Chicago Valley SEDA and the associated off-site transmission corridor. Some potential exists, however, for the occurrence of undocumented hazardous material sites within or adjacent to the Chicago Valley SEDA and off-site transmission corridor in association with uses such as agricultural operations and vehicle/equipment use and storage. Potential impacts related to hazardous material sites for the Chicago Valley SEDA and the associated off-site transmission corridor are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 300 acres within the 1,551-acre SEDA (or approximately 19.3 percent of the total SEDA area). Because the exact nature and location of this development and the associated off-site transmission corridor have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Chicago Valley SEDA and the associated off-site transmission corridor are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

Because the Chicago Valley SEDA is located approximately 5 miles from the closest airport, associated potential impacts related to airport hazards would be less than significant. Based on the unknown location of the associated off-site transmission corridor, however, associated impacts from airport-related hazards at the Hidden Hills Airport would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

School-related Hazards

Because the Chicago Valley SEDA is located approximately 4.8 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Chicago Valley SEDA are SR 127 and SR 178, with SR 178 located near the western SEDA boundaries. One or more of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Chicago Valley SEDA would be less than significant, for similar reasons as described above for the Laws SEDA, as well as the fact that none of the noted roadways extends into or through the Chicago Valley SEDA.

Wildfire Hazards

The Chicago Valley SEDA is rated as moderate for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA and the associated off-site transmission corridor could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Charleston View Solar Energy Development Area

Hazardous Materials

Hazardous Material Sites

No mapped or listed hazardous material sites are located within the Charleston View SEDA or potential off-site transmission line corridor, with two "case closed" LUST sites listed just south of the southeastern SEDA boundary (SWRCB 2014; DTSC 2014). Some potential also exists for the occurrence of undocumented hazardous material sites within or adjacent to the Charleston View SEDA and/or transmission line corridor, however, in association with SEDA uses such as vehicle/equipment use and storage, and the presence of roadway, power line and substation development within the off-site transmission corridor. Potential impacts related to hazardous material sites for the Charleston View SEDA (and the potential off-site transmission line corridor) are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 2,400 acres within the 39,697-acre SEDA (or approximately 6 percent of the total SEDA area). Because the exact nature and location of development within the SEDA and potential off-site corridor have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Charleston View SEDA and potential off-site transmission line corridor are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

The Charleston View SEDA and potential off-site transmission line corridor are located approximately 1.1 miles from the closest airport. While potential project-related development would be limited to approximately 13 percent of the SEDA as noted above, the exact nature and location of this development (and the potential transmission line) have not been identified. As a result, site-specific effects from airport-related hazards would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

School-related Hazards

Because the Charleston View SEDA is located approximately 5 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Charleston View SEDA are SR 127 and SR 178 in the County, and Nevada SR 372 (the continuation of SR 178 in Nevada) and SR 160. One or more of these roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Charleston View SEDA (and the potential off-site transmission line) would be less than significant, for similar reasons as described above for the Laws SEDA, as well as the fact that none of the noted roadways extend into or through the Charleston View SEDA.

Wildfire Hazards

The Charleston View SEDA is rated as moderate for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA (and the potential off-site transmission line) could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

Sandy Valley Solar Energy Development Area

Hazardous Materials

Hazardous Material Sites

No mapped or listed hazardous material sites are located within the Sandy Valley SEDA or nearby areas. Some potential also exists for the occurrence of undocumented hazardous material sites within or adjacent to the Sandy Valley SEDA, however, in association with uses such as agricultural operations and vehicle/equipment use and storage. Potential impacts related to hazardous material sites for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 3,097-acre SEDA (or approximately 19.4 percent of the total SEDA area). Because the exact nature and location of development within the Sandy Valley SEDA have not been identified, however, the associated site-specific effects related to hazardous material sites would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Operational Hazardous Materials

Potential impacts related to operational hazardous materials at the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and would be less than significant.

Airport-related Hazards

The Sandy Valley SEDA is located approximately 0.9 mile from the closest airport. While potential project-related development would be limited to approximately 19 percent of the SEDA as noted above, the exact nature and location of this development have not been identified. As a result, the associated site-specific effects from airport-related hazards would be potentially significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

School-related Hazards

Because the Sandy Valley SEDA is located approximately 1.5 miles from the closest school site, associated potential impacts related to the use or emission of hazardous materials or wastes would be less than significant.

Emergency Response/Evacuation Plans

The primary emergency evacuation routes in the vicinity of the Sandy Valley SEDA are SR 178 in the County, and Nevada SR 372 and SR 160. These roadways would likely be utilized during project construction and operation, for routine vehicle activities such as employee access and material/equipment deliveries. Based on the nature and generally low volume of anticipated project-related traffic for such activities, associated potential impacts to emergency evacuation routes would be less than significant.

Potential impacts associated with construction-related encroachment into evacuation route rights-of-way for the Sandy Valley SEDA would be less than significant, for similar reasons as described above for the Laws SEDA, as well as the fact that none of the noted roadways extend into or through the Sandy Valley SEDA.

Wildfire Hazards

The Sandy Valley SEDA is rated as moderate for wildfire hazards by CAL FIRE. The occurrence of wildfires within the SEDA could potentially expose people and/or structures to related hazards, and associated potential impacts would be significant. Mitigation is identified below in Section 4.8.5 to address these potential impacts, and is similar to that described above for the Laws SEDA.

4.8.4 Level of Significance before Mitigation

Based on the analyses in Section 4.8.3, future utility scale implementation of the proposed project could result in potentially significant impacts related to: (1) the known or potential occurrence of hazardous material sites in the SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs; (2) airport-related hazards for the Laws, Trona, Charleston View, and Sandy Valley SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs; (3) school-related hazards for the OVSA; and (4) wildfire hazards for all nine SEDAs, the OVSA, and the potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts related to hazards and hazardous materials when compared with utility scale facilities; however, the severity of the impact would ultimately depend on the location of the project in relation to the issues described above. Small scale projects are typically considered to result in no impacts under CEQA.

4.8.5 Mitigation Measures

Hazards and hazardous materials mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts related to hazards and hazardous materials. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact related to hazards and hazardous materials and would not require a site specific environmental site assessment (ESA) investigation or implementation of the hazards and hazardous materials mitigation measures listed in this section. In such cases, the County shall document that no impacts to geology and soils would occur and no mitigation measures are necessary in lieu of the Phase 1 ESA required in Mitigation Measure HAZ-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to result in impacts related to hazards and hazardous materials, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.8.3 and 4.8.4, implementation of solar energy projects under the REGPA could result in potentially significant impacts related to hazards and hazardous materials. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to geology and soils, and may reduce them to below a level of significance in most cases.

MM HAZ-1: Conduct site-specific Phase I ESA.

Site-specific Phase I ESAs shall be completed for all utility scale proposed development projects within the individual SEDAs and the OVSA, as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. Specifically, Phase I ESA investigations shall be conducted for the noted areas to identify the potential occurrence of hazardous materials and Recognized Environmental Conditions, (RECs, as defined in ASTM International E1527-05, Section 1.1.1), potentially involving the presence of contaminated soil or groundwater, and/or structures or facilities containing hazardous materials such as asbestos insulation, lead-based paint and polychlorinated biphenyls. Phase I investigations shall include: (1) appropriate regulatory database records review; (2) site reconnaissance; (3) review of appropriate maps, aerial photographs and other pertinent documents; (4) interviews with current/previous property owners, local government/industry officials, and other individuals with knowledge of the property and/or local environmental conditions; (5) documentation of known or potential RECs; and (6) identification of recommendations to address RECs or other concerns, if applicable (including Phase II ESA investigations, as outlined below).

Depending on the results of the described Phase I ESAs, one or more Phase II ESA investigations shall be conducted if identified as part of the Phase I recommendations. Phase II ESAs consist of "intrusive" investigations, in which original samples of soil, groundwater and/or building materials are collected and submitted for laboratory analysis to identify applicable contaminates. Based on the results of this testing, the Phase II ESAs shall identify the type and extent of REC (or other) contamination, and provide appropriate remedial measures to address associated hazards. Typical remedial measures may include efforts such as removal and proper disposal of contaminated materials (or on-site treatment and reuse, if applicable), or in situ treatments such as oxidation (use of aerobic bacteria to accelerate natural attenuation of organic contaminants) or bioremediation (e.g., using bacteria to remove contaminates from groundwater).

All ESAs conducted for the proposed project shall be prepared in conformance with applicable regulatory and industry standards, including ASTM International E1527-05: Standard Practice for Environmental Site Assessments; and CFR Part 312: Standards and Practices for All Appropriate Inquiries. Applicable results and recommendations from the described Phase I and Phase II investigations shall be incorporated into the associated individual final project design documents to address identified potential hazardous material concerns.

MM HAZ-2: Conduct site-specific Airport Safety Investigations.

Site-specific Airport Safety Investigations shall be completed for all utility scale proposed development projects in the Laws, Trona, Charleston View, and Sandy Valley SEDAs, the OVSA, and related potential off-site transmission line corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs that are within two miles of a public or private airport prior to final project design approval. These investigations will assess the site-specific design and location of proposed facilities to determine if they are compatible with existing and planned future activities at nearby airports. The Airport Safety Investigations shall utilize applicable criteria from proposed project design information (e.g., facility locations and heights), airport CLUPs and/or Management Plans (if applicable), the Inyo County Airport Hazard Overlay Ordinance, and/or other pertinent information related to considerations such as airport hazard zones and traffic patterns, to identify potential safety conflicts. If such conflicts are identified, the Airport Safety Investigations shall provide remedial measures to address these concerns, potentially including efforts such as relocating and/or redesigning proposed facilities to avoid potential hazards. Applicable results and recommendations from the described Airport Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential airport-related concerns.

MM HAZ-3: Conduct site-specific School Safety Investigations.

Site-specific School Safety Investigations shall be completed for all proposed utility scale solar development projects in the OVSA that are within 0.25 mile of an existing or proposed school, prior to final project design approval. These investigations will assess the site-specific design and location of proposed facilities to determine if they are compatible with existing and planned future activities at schools located within one-quarter mile. The School Safety Investigations shall utilize applicable criteria from proposed project design information, such as proposed hazardous material use/storage, associated facility locations, and required measures in HMBEPs and/or Risk Management Plans (e.g., proper inventory documentation, storage/containment, transport, employee training, and spill response/clean-up measures) to assess potential hazards to local schools from the use or emission of hazardous materials or wastes. If such hazards are identified, the School Safety Investigations shall provide remedial measures to address these concerns, potentially including efforts such as relocating (i.e., outside of the one-quarter mile boundary) and/or redesigning proposed facilities (e.g., providing enclosures or secondary containment) to avoid potential hazards. Applicable results and recommendations from the described School Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential school-related concerns.

MM HAZ-4: Conduct site-specific Wildfire Safety Investigations.

Site-specific Wildfire Safety Investigations shall be completed for all proposed utility scale solar development projects within the individual SEDAs and the OVSA, as well as the potential off site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), that are in areas rated as moderate or high for wildfire hazards by CAL FIRE prior to final project design approval. Specifically, the Wildfire Safety Investigations shall be conducted for the noted areas to identify site-specific fire hazard ratings and associated risks to people and structures at proposed development sites. The Wildfire Safety Investigations shall include assessment of the following criteria for the noted areas and surrounding environments: (1) fire history; (2) fuel (vegetation) types; (3) climatic conditions (including wind patterns); (4) projected fire behavior (including flame lengths) from computer modeling (e.g., BehavePlus Fire Modeling System 5.0.4); (5) documentation of known or potential wildfire hazards to on-site people and structures; and (6) identification of remedial measures, if applicable (per applicable regulatory standards such as the California Building, Fire, and Residential Codes) potentially including efforts such as the use of fuel modification, structural features (e.g., non-combustible materials and fire/ember/smoke barriers), alarm systems, and/or automatic sprinklers. Applicable results and recommendations from the described Wildfire Safety Investigations shall be incorporated into the associated individual final project design documents to address identified potential wildfire-related concerns.

4.8.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.8.5, all identified project-related impacts associated with hazards and hazardous materials would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

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4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Existing Conditions

4.9.1.1 Inyo County Hydrologic Environment

Watershed and Drainage Characteristics

The County is located within the South Lahontan Basin, as designated in the 1995 (as amended) Lahontan RWQCB Water Quality Control Plan for the Lahontan Region (Basin Plan). The South Lahontan Basin includes 29 Hydrologic Units (HU) that reflect major watersheds and associated drainage features, with all or part of 14 HUs located within the County (Figure 4.9-1). Most of the noted HUs are also divided into a number of hydrologic areas (HA) and/or hydrologic subareas (HSA) based on local drainage characteristics. As described in Section 4.6 of this PEIR, the County is within the Basin and Range Geomorphic Province, which exhibits predominantly internal drainage. Accordingly, most local surface flows drain into a number of playas (dry or ephemeral lake beds), and generally do not leave the associated HUs. The major perennial drainage feature in the County is the Owens River, which receives substantial runoff from tributary drainages flowing east from the Sierra Nevada Mountains (and lesser flows from the White/Inyo Mountains to the east), and flows generally south before terminating at Owens Lake. Much of this flow, however, is diverted by the LADWP, and Owens Lake is typically dry except for the remnant brine pool and discharges to the lake required to prevent dust generation and protect local air quality.

Most other drainage courses within the County are ephemeral and exhibit surface flows only during larger storm events, including all or part of several large drainage courses such as the Amargosa River and Death Valley Wash. Portions of the Amargosa River near Tecopa are also perennial, however, and much of the river exhibits substantial subsurface flow which contributes to a large groundwater aquifer in Death Valley (as outlined below). Additional perennial surface flows within the County are limited to minor features such as springs. Due to the extensive area within the County and the large number of associated HUs, applicable HU (and related HA/HSA) descriptions are included in Section 4.9.1.2.

Flood Hazards

Portions of the County have been mapped for flood hazards by FEMA, with 100-year floodplains identified for a number of larger drainages including the Owens River and associated tributaries, several drainage canals, and a number of larger ephemeral washes (Figure 4.9-2) (FEMA 2014a). Applicable individual floodplain descriptions are included in Section 4.9.1.2.

Groundwater

As described in Section 4.6, all or part of 38 groundwater basins are located within the County (Figure 4.9-3). These basins are primarily unconfined (i.e., not under pressure) or partially confined alluvial aquifers, and vary in size (areal extent) from approximately 312 (Santa Rosa Flat) to 921,000 acres (Death Valley). The Death Valley Basin is also the largest local aquifer in terms of storage volume, with an estimated capacity of 11 million acre-feet[1] (DWR 2003). In addition to the noted regional basins, shallow perched water conditions may occur in applicable areas throughout the County (e.g., along drainage courses). Perched groundwater generally consists of one or more unconfined aquifers contained by impermeable or semi-permeable strata, with such aquifers typically limited in volume and extent but variable with conditions including seasonal precipitation and irrigation.

Groundwater is an important source for local agricultural, domestic, municipal and environmental uses, with groundwater withdrawals from applicable basins subject to associated legal requirements. Specifically, one such requirement is related to a 1991 agreement between the County and LADWP to manage groundwater use within the County (with additional information provided in Section 4.9.1.3). Due to the large number and extent of groundwater basins within the County, applicable groundwater resource descriptions are included in Section 4.9.1.2.

Surface Water Quality

As previously described, perennial surface waters within the County consist of the Owens River and associated tributaries, as well as localized portions of the Amargosa River and other minor flow features (such as named and/or unnamed springs). Most other drainage within the County is ephemeral, with associated flows occurring primarily during storm events. Known surface water quality data for the County are available from sources including the State Surface Water Ambient Monitoring Program (SWAMP), biannual water quality assessments conducted by the SWRCB, and the Basin Plan, as outlined below.

<u>State Surface Water Ambient Monitoring Program</u>

Monitoring conducted under the SWAMP periodically rotates among watersheds, with monitoring conducted at three locations along the Amargosa River near Tecopa, one site along Death Valley Wash at Mesquite Springs, and two sites along upstream portions of the Owens River watershed (outside of the County) during the period of 2001 to 2005 (including monitoring conducted under a separate effort by the USGS, SWAMP 2007). Specifically, the Amargosa River locations include one site at the Tecopa gage (adjacent to the community of Tecopa), and two downstream sites (at Upper Canyon and just below Willow Creek), while the Death Valley Wash/Mesquite Springs site is located near Scotty's Castle in Death Valley National Park. The Owens River watershed sites are located along Hilton Creek near the inlet to Crowley Lake (approximately 8 miles north of the County line), and at Rock Creek near Crowley Lake Road (approximately 7 miles north of the County line). The results of these monitoring efforts, similar to the North Lahontan Region as a whole, indicate generally good water quality, although some criteria were exceeded and sampling sizes are typically limited. In addition, SWAMP monitoring for fecal coliform bacteria was conducted in 2012 and 2013 along local segments of Bishop Creek, a tributary to the Owens River that extends between Lake Sabrina and the Owens River near the City of Bishop (Inyo County 2014). With respect to Basin Plan water quality

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[1] One acre-foot is the volume of water required to cover an area of 1 acre to a depth of 1 foot, and includes approximately 326,000 gallons.

objectives, the following conclusions are provided from the noted SWAMP monitoring efforts (SWAMP 2007; Inyo County 2014; Inyo County Register 2014):

- Samples from Bishop Creek exhibited fecal coliform bacteria levels that exceed associated Basin Plan criteria. While the source of this contamination is currently under investigation, the elevated bacteria levels represent potential health risks for water contact recreation, and microbial source tracking efforts are ongoing to identify the contaminant source(s) and develop remedial actions.

- Samples from the Amargosa-Tecopa Gage site exhibited: (1) two samples (out of two) that exceeded pH criteria; (2) zero samples (out of two) that exceeded dissolved oxygen criteria; (3) zero samples (out of one) that exceeded fecal coliform bacteria criteria; and (4) zero samples (out of 96) that exceeded pesticide criteria.

- Samples from the Amargosa River-Upper Canyon site exhibited: (1) two samples (out of two) that exceeded pH criteria; (2) zero samples (out of two) that exceeded dissolved oxygen criteria; (3) zero samples (out of one) that exceeded fecal coliform bacteria criteria; and (4) one sample (out of 96) that exceeded pesticide criteria.

- Samples from the Amargosa River-Willow Creek site exhibited: (1) two samples (out of two) that exceeded pH criteria; (2) zero samples (out of two) that exceeded dissolved oxygen criteria; (3) one sample (out of one) that exceeded fecal coliform bacteria criteria; and (4) one sample (out of 96) that exceeded pesticide criteria.

- Samples from the Death Valley Wash-Mesquite Springs site exhibited: (1) zero samples (out of two) that exceeded pH criteria; (2) zero samples (out of two) that exceeded dissolved oxygen criteria; and (3) zero samples (out of two) that exceeded fecal coliform bacteria criteria.

- Samples from the Hilton Creek site exhibited: (1) zero samples (out of 14) that exceeded pH criteria; (2) six samples (out of 15) that exceeded dissolved oxygen criteria; (3) two samples (out of five) that exceeded total dissolved solids (TDS) and fecal coliform bacteria criteria; (4) zero samples (out of five) that exceeded chloride, nitrate and total nitrogen criteria; and (5) zero samples (out of four) that exceeded orthophosphate criteria.

- Samples from the Rock Creek site exhibited: (1) zero samples (out of 15) that exceeded pH criteria; (2) one sample (out of 15) that exceeded dissolved oxygen criteria; (3) five samples (out of five) that exceeded TDS criteria; (4) zero samples (out of five) that exceeded fecal coliform bacteria, chloride, nitrate and total nitrogen criteria; and (5) zero samples (out of four) that exceeded orthophosphate criteria.

In addition, a statewide summary report of toxicity in surface waters did not identify any toxicity issues for two local sites, including Bishop Creek at East Line Street (approximately 2.6 miles south of the Community of Laws), and the mouth of the Owens River (at Owens Lake, SWAMP 2012). Toxicity generally indicates a "statistically significant adverse impact on aquatic test organisms" (e.g., algae and fish species), with most toxicity issues associated with the presence of chemical pesticides.

Bi-annual Clean Water Act Assessments

The SWRCB produces bi-annual qualitative assessments of statewide and regional water quality conditions. These assessments are focused on CWA Section 303(d) impaired water listings and priority status for assignment of total maximum daily load requirements. Specifically, the assessments involve prioritizing waters on the basis of water quality (i.e., impaired) status and the necessity for assigning quantitative contaminant load restrictions (i.e., total maximum daily loads), with these data submitted to the USEPA for review and approval. Impaired waters identified within the County in the most current (2010) approved 303(d) assessment include the following: (1) 67 miles of the Amargosa River listed for arsenic (including three reaches between the Nevada State line and Willow Creek); (2) less than one acre at Mesquite Springs listed for arsenic and boron; (3) 99 acres of Pleasant Valley Reservoir listed for organic enrichment/low dissolved oxygen; and (4) 1,703 acres of Haiwee Reservoir listed for copper (SWRCB 2010).

Lahontan Regional Water Quality Control Board Water Quality Control Plan

While the Basin Plan does not include water quality data, it does provide regulatory standards that are based on factors including local water quality (with additional discussion of the Basin Plan and other standards included in Section 4.9.1.3).

Groundwater Quality

Due to the large number and extent of groundwater basins within the County, as well as the fact that associated water quality conditions are largely basin-specific, applicable groundwater quality descriptions are included in Section 4.9.1.2.

4.9.1.2 Project Area Hydrologic Environment

Western Solar Energy Group

Laws Solar Energy Development Area

Watershed and Drainage Characteristics

The Laws SEDA is located within the Upper Owens HA (603.20) of the Owens HU (603.00) (Figure 4.9-1). Principal drainage in both noted designations is through the Owens River and associated tributaries (including Bishop Creek in the site vicinity), with the river continuing generally south to Owens Lake as previously described. Surface drainage within the Laws SEDA is primarily west and southwest to Bishop Creek and the Owens River, through a number of predominantly small and unnamed ephemeral washes, several artificial drainage channels related to agricultural activities, and as non-point (overland) flow. Average annual precipitation in the site vicinity (Bishop) is approximately 5.2 inches, with the majority (approximately 73 percent) occurring during the period of November through March (Weather.com 2014a).

Flood Hazards

Several relatively minor areas of mapped FEMA 100-year floodplains are located within or adjacent to the Laws SEDA, including areas associated with the Owens River/Bishop Creek in the southwestern portion of the SEDA, and a small unnamed drainage near the north-central boundary (Figure 4.9-2).

Groundwater

The majority of the Laws SEDA (except for the northwestern-most portion) is located within the areal extent of the Owens Valley Groundwater Basin (Basin No. 6-12) (Figure 4.9-3). The Owens Valley Basin includes an area of approximately 661,000 acres, with water-bearing strata consisting of a thick (approximately 1,200 feet) sequence of primarily alluvial deposits divided into three distinct units (Upper, Middle and Lower). Total estimated storage capacity is approximately 30 to 35 million acre-feet, with average well depths of 110 feet for domestic wells and 360 feet for municipal/irrigation wells (DWR 2003). Groundwater in the Owens Valley Basin is characterized as primarily sodium-bicarbonate in nature, and exhibits generally good water quality as evidenced by total dissolved solids (TDS) levels of less than 300 milligrams per liter (mg/l) in most areas (although TDS levels beneath Owens Lake can reach 450,000 mg/l, DWR 2003).

<u>Owens Lake Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The Owens Lake SEDA is located within the Lower Owens HA (603.30) of the Owens HU (603.00) (Figure 4.9-1). Principal drainage in the Lower Owens HA is through the Owens River and associated tributaries (including Cottonwood and Ash creeks in the site vicinity), with the river draining to Owens Lake as previously described. Surface drainage within the Owens Lake SEDA is within the southernmost portion of the Owens River (i.e., where it enters Owens lake), and internal overland flow within the lakebed. Average annual precipitation in the site vicinity (Olancha) is approximately 7.4 inches, with the majority (approximately 75 percent) occurring during the period of November through March (Weather.com 2014b).

Flood Hazards

Much of the Owens Lake surface and the associated southern portion of the Owens River include mapped FEMA 100-year floodplains (Figure 4.9-2).

Groundwater

The entire Owens lake SEDA is located within the areal extent of the Owens Valley Groundwater Basin, as described above for the Laws SEDA.

<u>Rose Valley Solar Energy Development Area</u>

Watershed and Drainage Characteristics

Approximately the northern half of the Rose Valley SEDA is located within the Lower Owens HA of the Owens HU (as described above for the Owens Lake SEDA), while the southern half is within the Rose HA (624.10) of the Indian Wells HU (624.00) (Figure 4.9-1). Surface drainage in the Rose HA (and the Rose Valley SEDA) is internal and flows west and south into Rose

Valley Creek via a number of unnamed ephemeral washes and as overland flow. Rose Valley Creek continues generally south and terminates at a number of local playas. The portion of the Lower Owens HA within the Rose Valley SEDA also includes two major surface water features, North and South Haiwee Reservoirs, although these impoundments were constructed to provide in-line storage for diverted flows associated with the LADWP Aqueduct. Average annual precipitation in the site vicinity (Olancha) is the same as that described above for the Owens Lake SEDA (Weather.com 2014b).

Flood Hazards

Portions of the eastern Rose Valley SEDA include mapped FEMA 100-year floodplains associated with Rose Valley Creek and related tributaries (Figure 4.9-2).

Groundwater

Approximately the northern half of the Rose Valley SEDA is located within the areal extent of the Owens Valley Groundwater Basin, as described above for the Laws SEDA. Virtually the entire southern half of the Rose Valley SEDA (except for a small area south of South Haiwee Reservoir) is within the Rose Valley Groundwater Basin (Basin No. 6-56) (Figure 4.9-3). The Rose Valley Basin includes an area of approximately 42,500 acres, with water-bearing strata consisting of a sequence of alluvial deposits extending to depths of at least 176 feet. The upper portions of this sequence consist of younger, unconsolidated alluvium, while the lower sediments are older and unconsolidated to poorly consolidated. Total estimated storage capacity is approximately 820,000 acre-feet, with historic aquifer depths ranging from approximately 20 feet below the surface at Little Lake (approximately 4.5 miles south of the Rose Valley SEDA), to 190 feet below the surface in the northern portion of Rose Valley (DWR 2003). Groundwater character in the Rose Valley Basin varies from calcium-magnesium-bicarbonate in the north and central areas, to sodium-bicarbonate in the southern basin near Little Lake. Associated water quality is generally good in the north and central areas, with average TDS levels of around 350 mg/l. The southern area exhibits moderate to poor quality, with elevated boron levels and TDS content of between 700 and 1,300 mg/l (DWR 2003).

The Rose Valley Basin has also been subject to recent (since 2009) groundwater withdrawals associated with the Hay Ranch Water Extraction and Delivery Project, which is using groundwater from the Rose Valley Basin for injection at the Coso geothermal field (located approximately 6.5 miles east of the Rose Valley SEDA on the China Lake NAWS). Based on technical analyses and ongoing groundwater pumping/monitoring conducted for the Hay Ranch Project at locations within the Rose Valley SEDA (e.g., wells located approximately 2 miles north of Coso Junction), the following summary information is provided (Team Engineering & Management, Inc., 2014; MHA Environmental Consulting 2008):

- Observed groundwater levels at local wells in 2007 occurred at depths of between approximately 140 to 240 feet in the northern and central portions of Rose Valley, and at a depth of approximately 40 feet in the southern end of the valley (near Little Lake).

- Groundwater levels in Rose Valley generally rose between approximately 1 to 2 feet during the period of 2001 to 2007, with wells at the Hay Ranch project site exhibiting a groundwater level rise of approximately 2 feet during that period.

- Observed TDS levels for groundwater in 2007 generally ranged between approximately 800 and 900 mg/l in the northern end of Rose Valley, and between 500 and 700 mg/l in the southern portion of the valley.

- Based on monitoring data for the second quarter of 2014, no established thresholds associated with groundwater drawdown or TDS levels were exceeded for pumping associated with the Hay Ranch Project.

<u>Pearsonville Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The Pearsonville SEDA is located within the China Lake HA (624.20) of the Indian Wells HU (Figure 4.9-1). Surface drainage in the Pearsonville HA (and the Pearsonville SEDA) occurs through a number of unnamed ephemeral washes flowing generally east and west from the adjacent mountains and as overland runoff, with these flows internal and terminating at one or more local playas. Average annual precipitation in the site vicinity (Inyokern) is approximately 5 inches, with the majority (approximately 82 percent) occurring during the period of November through March (Weather.com 2014c).

Flood Hazards

No mapped FEMA 100-year floodplains are located within or adjacent to the Pearsonville SEDA (Figure 4.9-2).

Groundwater

The Pearsonville SEDA is located within the areal extent of the Indian Wells Valley Groundwater Basin (Basin No. 6-54) (Figure 4.9-3). The Indian Wells Valley Basin includes an area of approximately 382,000 acres, with water-bearing strata consisting of a thick (over 1,000 feet) sequence of lakebed, stream and alluvial fan deposits divided into two distinct units (Upper and Lower, with most pumped groundwater derived from the Lower Aquifer). Total estimated storage capacity is approximately 5.1 million acre-feet, with historic local well depths varying between approximately 75 (Upper Aquifer) and 1,000 feet (Lower Aquifer) and water table levels generally declining (DWR 2003; US Geological Survey 1991). Groundwater character and quality in the Indian Wells Valley Basin is highly variable, with overall TDS levels ranging between 110 and 1,620 mg/l (DWR 2003).

<u>Owens Valley Study Area</u>

Watershed and Drainage Characteristics

Approximately the northern half of the OVSA is located within the Upper Owens HA, while the southern half of the study area is within the Lower Owens HA (as described above for the Laws and Owens Lake SEDAs, respectively). Surface drainage in both the Upper and Lower Owens HAs (and the study area) is through the Owens River and associated tributaries, including portions of Pine, McGee, Bishop, Big Pine, Birch, Sawmill, Independence, Shepard, and Lone Pine creeks draining east from the Sierra Nevada Mountains (as well as several additional east-flowing creeks, a number of smaller unnamed washes draining west from the White/Inyo Mountains, and overland flow). Surface drainage within the study area is predominantly east and west as noted to the Owens River, which flows generally south and terminates at Owens Lake as previously described. Average annual precipitation ranges from approximately 5.2 inches in the northern study area vicinity (Bishop), to 5.5 inches in the southern study area (Lone Pine), with the majority (approximately 73 to 81 percent, respectively) occurring during the period of November through March (Weather.com 2014a, 2014d). A number of surface water bodies are also present in the Owens Valley Study Area, including Pleasant Valley Reservoir on the Owens River/Bishop Creek (northwest of Bishop), Tinemaha Reservoir on the Owens River (south of Big Pine), Diaz Lake (just northwest of Owens Lake), and several variably sized unnamed impoundments in the vicinity of Bishop, Big Pine, and Blackrock that are apparently associated with agricultural and/or wildlife uses.

Flood Hazards

Several mapped FEMA 100-year floodplains are located within the OVSA, including areas associated with the Owens River and several of the above noted tributaries (Figure 4.9-2).

Groundwater

The majority of the OVSA is located within the areal extent of the Owens Valley Groundwater Basin, as described above for the Laws SEDA (Figure 4.9-3).

Southern Solar Energy Group

<u>Trona Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The Trona SEDA is located within the Searles Valley HA (621.10) of the Trona HU (621.00) (Figure 4.9-1). Surface drainage in the Searles Valley HA (and the Trona SEDA) is variable in direction and occurs through a number of unnamed ephemeral washes and as overland flow, with these flows internal and terminating at one or more local playas (including Searles Lake). Average annual precipitation in the site vicinity (Trona) is approximately 3.9 inches, with the majority (approximately 77 percent) occurring during the period of November through March (Weather.com 2014e).

A potential off-site transmission corridor has also been identified for the Trona SEDA, and would likely extend along SR 178 to an existing 115 kilovolt transmission line located along US 395 near the City of Ridgecrest (in Kern County). This corridor includes generally similar topographic and drainage conditions as the Trona SEDA, with generally level to moderately sloping terrain and internal surface drainage occurring through a number of unnamed ephemeral washes and as overland flow.

Flood Hazards

No mapped FEMA 100-year floodplains are located within or adjacent to the Trona SEDA (Figure 4.9-2). Depending on the ultimate location, the potential off-site transmission corridor would likely cross one or more mapped FEMA 100-year floodplains in the vicinity of Trona and the City of Ridgecrest (FEMA 2014b).

Groundwater

The Trona SEDA is located within the areal extent of the Searles Valley Groundwater Basin (Basin No. 6-52) (Figure 4.9-3). The Searles Valley Basin includes an area of approximately 197,000 acres, with water-bearing strata consisting of a thick (at least 750 feet) sequence of younger unconsolidated alluvial deposits and underlying (locally semi-consolidated) older alluvium. Total estimated storage capacity is approximately 2.1 million acre-feet, with average municipal/irrigation well depths of 300 feet (DWR 2003). Groundwater in the Searles Valley Basin is characterized primarily as either calcium-sodium-bicarbonate or sodium-calcium-bicarbonate in nature, with groundwater near Searles Lake characterized as sodium-chloride in nature. The northwestern and southwestern portions of the basin exhibit generally good water quality (with locally elevated fluoride and nitrate levels), while areas near Searles Lake have extremely poor water quality (with TDS levels of between 12,000 and 420,000 mg/l, DWR 2003). The potential off-site transmission corridor associated with the Trona SEDA is located within the areal extent of the Searles Valley and Indian Wells Valley groundwater basins, as previously described.

Eastern Solar Energy Group

<u>Chicago Valley Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The Chicago Valley SEDA is located within the Chicago HSA (609.43) and Amargosa Desert HA (609.40) of the Amargosa HU (609.00) (Figure 4.9-1). Principal drainage in the noted hydrologic designations is through the Amargosa River and a number of associated ephemeral washes, with these flows internal and terminating in Death Valley. Surface drainage within the Chicago Valley SEDA is predominantly to the west-southwest, and occurs through a number of small, unnamed ephemeral washes that are ultimately tributary to the Amargosa River, and as overland flow. Average annual precipitation in the site vicinity (Pahrump, Nevada) is approximately 5.1 inches, with the majority (approximately 62 percent) occurring during the period of November through March (Weather.com 2014f).

A potential off-site transmission corridor has also been identified for the Chicago Valley SEDA, and extends generally east-northeast from the SEDA for approximately 19 miles to an existing 500-kV transmission line located along SR 160 in the state of Nevada. This corridor includes rugged terrain in the Nopah Range and generally moderate to level topography in other areas, with similar drainage characteristics as described above for the Chicago Valley SEDA (and below for the Charleston View SEDA and associated potential off-site transmission corridor).

Flood Hazards

No mapped FEMA 100-year floodplains are located within or adjacent to the Chicago Valley SEDA (Figure 4.9-2), although the potential off-site transmission corridor would cross several mapped FEMA 100-year floodplains, including areas associated with larger washes (FEMA 2014c) (Figure 4.9-2).

Groundwater

The Chicago Valley SEDA is located within the areal extent of the Middle Amargosa Valley Groundwater Basin (Basin No. 6-20) (Figure 4.9-3). The Middle Amargosa Valley Basin includes an area of approximately 390,000 acres, with water-bearing strata consisting of a thick (at least 900 feet) sequence of younger unconsolidated alluvial deposits and underlying (locally poorly consolidated) older alluvium. Total estimated storage capacity is approximately 6.8 million acre-feet, with average municipal/irrigation well depths of 2,500 feet (DWR 2003). Groundwater in the Amargosa Valley Basin varies in character from sodium-bicarbonate-sulfate in the northern areas, to calcium-bicarbonate or calcium-magnesium-bicarbonate in the south (including Chicago Valley). Water quality is varies widely in most areas of the basin (with TDS levels ranging from 550 to 2,475 mg/l and locally elevated fluoride and boron concentrations), although water quality in the Chicago Valley area is generally good (with TDS levels of approximately 290 to 475 mg/l, DWR 2003). The potential off-site transmission corridor associated with the Chicago Valley SEDA is located within the areal extent of the Middle Amargosa Valley and Pahrump Valley groundwater basins (with the Pahrump Valley Basin described below under the Charleston View SEDA).

<u>Charleston View Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The majority of the Charleston View SEDA is located within the Pahrump HU (610.00), with the southwestern portion of the SEDA within the California Valley HSA (609.44) and Amargosa Desert HA of the Amargosa HU (Figure 4.9-1). Surface drainage in the noted hydrologic designations (and the Charleston View SEDA) is variable in direction with topography, and occurs through a number of unnamed ephemeral washes, including several large washes in Pahrump Valley, and as overland flow. All of these flows are internal and terminate at one or more local playas, including Stewart Dry Lake. Average annual precipitation in the site vicinity (Pahrump) is the same as that described above for the Chicago Valley SEDA.

A potential off-site transmission corridor has also been identified for the Charleston View SEDA, and extends generally northeast from the eastern SEDA boundary along Tecopa Road to an existing 500 kilovolt transmission line located along SR 160 in the state of Nevada (CEC 2012). This corridor includes generally similar topographic and drainage conditions as the Charleston View SEDA, with generally level terrain and internal surface drainage occurring through a number of unnamed ephemeral washes and as overland flow.

Flood Hazards

Several mapped FEMA 100-year floodplains are located within and adjacent to the Charleston View SEDA and the potential off-site transmission line corridor, including areas associated with larger washes (FEMA 2014c) (Figure 4.9-2).

Groundwater

The majority of the Charleston View SEDA (and the potential off-site transmission line corridor) is located within the areal extent of the Pahrump Valley Groundwater Basin, with the southwestern portion of the SEDA within the California Valley Basin (Basin Nos. 6-28 and 6-79, respectively) (Figure 4.9-3). The Pahrump Valley Basin includes an area of approximately 93,100 acres, with the primary water-bearing strata consisting of a thick (at least 800 feet) sequence of unconsolidated younger alluvial fan deposits and underlying (locally semi-consolidated) older alluvium. Total estimated storage capacity is approximately 690,000 acre-feet, with local groundwater levels in the site vicinity of approximately 130 feet below the surface (CEC 2012; DWR 2003). Available long-term well data for the northern portion of the Pahrump Valley Basin suggest a general decline in groundwater levels of approximately 1 foot per year between 1950 and 2000, with an associated area of potential subsidence (although this area is located northeast of the Charleston View SEDA and is primarily in the state of Nevada, CEC 2012). The California Valley Basin includes an area of approximately 58,300 acres, with the primary water-bearing strata consisting of Quaternary alluvium (including younger alluvium underlain by older and locally poorly consolidated older alluvial deposits). Groundwater storage capacity is unknown, with historic (1942-1953) water table levels of between 8 and 42 feet below the surface and no known current data available (DWR 2003).

Groundwater character in the Pahrump Valley Basin as a whole varies from calcium-magnesium-bicarbonate to magnesium-calcium-bicarbonate in nature, with generally good water quality as evidenced by TDS levels of between 145 and 540 mg/l (DWR 2003). Recent (2011-2012) data from a small number of wells within the Charleston View SEDA also reflect good water quality, with TDS levels of between 250 and 260 mg/l (CEC 2012). Groundwater in the California Valley Basin is sodium-magnesium-bicarbonate-sulfate in nature, with generally good water quality and average TDS levels of around 500 milligrams mg/l (DWR 2003).

<u>Sandy Valley Solar Energy Development Area</u>

Watershed and Drainage Characteristics

The Sandy Valley SEDA is located within the Mesquite HU (611.00) (Figure 4.9-1). Surface drainage in this hydrologic designation and the Sandy Valley SEDA is primarily to the southeast and occurs through a number of unnamed ephemeral washes, with these flows internal and terminating at one or more local playas including Mesquite Lake (located southeast of the SEDA in San Bernardino County). Average annual precipitation in the site vicinity (Pahrump) is the same as that described above for the Chicago Valley SEDA.

Flood Hazards

One or more mapped FEMA 100-year floodplains are located adjacent to the northwestern portion of the Sandy Valley SEDA, including areas associated with larger washes (Figure 4.9-2).

Groundwater

The Sandy Valley SEDA is located within the areal extent of the Mesquite Valley Groundwater Basin (Basin No. 6-29) (Figure 4.9-3). The Mesquite Basin includes an area of approximately 88,400 acres, with the primary water-bearing strata consisting of a thick (approximately 1,100-foot) sequence of unconsolidated younger alluvial fan deposits and underlying (locally semi-consolidated) older alluvium. Total estimated storage capacity is approximately 580,000 acre-feet, with average municipal/irrigation well depths of 1,020 feet (DWR 2003). Groundwater character in the Mesquite Valley Basin is generally calcium-magnesium-bicarbonate and magnesium-calcium-bicarbonate in the northern basin, and sodium-chloride in the southern basin. The northern basin exhibits generally good to moderate water quality, with TDS levels of between 400 and 800 mg/l. Overall water quality in the southern basin is poor, with TDS levels primarily between 1,000 and 1,500 mg/l (but locally as high as 6,000 mg/l, DWR 2003).

4.9.1.3 Regulatory Framework

The development of solar energy projects at any scale may be subject to a number of regulatory requirements associated with federal, state, and local guidelines, as summarized below.

Federal and State Regulations

<u>National Pollutant Discharge Elimination System</u>

A proposed solar energy project would potentially be subject to applicable elements of the CWA, including the National Pollutant Discharge Elimination System (NPDES). Potential NPDES requirements associated with the proposed project include conformance with the following: (1) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit, NPDES No. CAS000002, SWRCB Order No. 2009-0009-DWQ; as amended by Order No. 2010-0014-DWQ); (2) Renewed Waste Discharge Requirements (WDR) and NPDES General Permit For Limited Threat Discharges To Surface Waters (NPDES NO. CAG996001, RWQCB Order No. R6T-2008-0023); (3) WDRs for Surface Water Disposal of Treated Groundwater (NPDES No. CAG916001, RWQCB Order No. R6T-2010-0024) and (4) related State and County standards as outlined below. Additional requirements under the CWA, including a Section 401 Water Quality Certification and a Section 404 Permit to discharge dredged or fill material to Waters of the US, are described in Section 4.4.

<u>General Construction Activity Storm Water Permit</u>

Conformance with the Construction General Permit is required prior to any development (including grading or other surface disturbance) of sites exceeding one acre, with this permit issued by the SWRCB under an agreement with the USEPA. Specific conformance requirements include implementing a Storm Water Pollution Prevention Plan (SWPPP), an associated Construction Site Monitoring Program, employee training and minimum BMPs, as well as a Rain Event Action Plan for applicable projects (e.g., those in Risk Categories 2 or 3, as outlined below). Under the Construction General Permit, project sites are designated as Risk Level 1 through 3 based on site-specific criteria (e.g., erosion potential and receiving water risk), with Risk Level 3 sites requiring the most stringent controls. Based on the site-specific risk level designation, the SWPPP and related plans/efforts identify detailed measures to prevent and control the off-site discharge of pollutants in storm water runoff. Depending on the risk level, these may include mandatory technology-based action levels, effluent limitations and advanced treatment systems. Specific pollution control measures require the use of best available technology economically achievable and/or best conventional pollutant control technology levels of treatment, with these requirements implemented through applicable BMPs. While site-specific measures vary with conditions such as risk level, proposed grading and slope/soil characteristics, detailed guidance for construction-related BMPs is provided in the permit and related sources including County standards and the Storm Water Best Management Practices Handbooks (California Stormwater Quality Association 2009). Specific requirements for a proposed project under this permit would be determined during development of individual SWPPPs, after completion of project plans and application submittals to the SWRCB (refer to Section 4.9.3 for more information).

<u>Renewed WDRs and NPDES General Permit for Limited Threat Discharges to Surface Waters</u>

This permit/order is applicable to discharges from activities such as construction dewatering and well construction/pump testing, although it is generally limited to circumstances involving the discharge of "…high quality or relatively pollutant-free water that poses little or no threat to water quality and the environment." Specifically, this permit regulates project discharges that meet the following criteria: (1) pollutant concentrations that do not cause, have a reasonable potential to cause, or contribute to any excursion above any applicable federal water quality criterion set forth by CWA Section 303, or RWQCB objectives; (2) pollutant concentrations that will not degrade water quality or affect beneficial uses; and (3) discharges that will not cause acute or chronic toxicity of receiving waters, where discharge to land is not practical.

<u>WDRs for Surface Water Disposal of Treated Groundwater</u>

This permit/order may be applicable to construction dewatering activities under circumstances where treatment is required prior to disposal to meet applicable water quality requirements. Specifically, this permit regulates pollutants from ground water clean-up actions involving discharge to surface waters, including wetlands. Primary pollutants covered are petroleum products and chlorinated hydrocarbon constituent residuals in treated waters.

<u>SWRCB/RWQCB Standards</u>

In addition to the CWA/NPDES standards described above, the SWRCB and RWQCB also regulate waste discharge under authority of the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act; California Water Code, Division 7, Section 13000 et seq.). The Porter-Cologne Act is the primary water quality control law for the state of California, and establishes a regulatory program to protect water quality and beneficial uses for State waters. The SWRCB and RWQCBs were established under the Porter-Cologne Act as the principle State agencies responsible for water quality control. The primary vehicle for implementing such control is the adoption of water quality control plans (commonly referred to as basin plans), which include criteria from sources such as the Porter-Cologne Act and the State non-degradation Policy (SWRCB Resolution No. 68-16) to designate beneficial uses and associated water quality objectives for surface and groundwater resources. The SWRCB and RWQCBs also adopt individual WDRs to address specific discharge types and conditions, with the Lahontan Region Basin Plan and applicable WDRs summarized below.

<u>Lahontan Region Basin Plan</u>

The Lahontan Basin Plan establishes a number of beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are generally defined as the uses of water necessary for the survival or well-being of man, plus plants and wildlife. Identified beneficial uses for waters located within or immediately downstream of the individual project areas are summarized below.

Western Solar Energy Group

- Laws Solar Energy Development Area – Applicable existing and potential beneficial uses for the Laws SEDA include municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); groundwater recharge (GWR); freshwater replenishment (FRSH); navigation (NAV); contact and non-contact recreation (REC-1 and REC-2); commercial and sport fishing (COMM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); and spawning, reproduction, and development (SPWN).

- Owens Lake Solar Energy Development Area – Applicable existing and potential beneficial uses for the Owens Lake SEDA include MUN, AGR, GWR, REC-1, REC-2, COMM, warm freshwater habitat (WARM), COLD, inland saline water habitat (SAL), WILD, water quality enhancement (WQE), and flood peak attenuation/flood water storage (FLD).

- Rose Valley Solar Energy Development Area – Applicable existing and potential beneficial uses for the Rose Valley SEDA include MUN, AGR, IND, GWR, REC-1, REC-2, COMM, COLD, WILD, RARE, and SPWN.

- Pearsonville Solar Energy Development Area – Applicable existing and potential beneficial uses for the Pearsonville SEDA include MUN, AGR, GWR, REC-1, REC-2, COMM, WARM, COLD, and WILD.

- Owens Valley Study Area – Applicable existing and potential beneficial uses for the Owens Valley Study Area include MUN, AGR, IND, GWR, FRSH, NAV, hydropower generation (POW), REC-1, REC-2, COMM, AQUA, WARM, COLD, SAL, WILD, preservation of biological habitats of special significance (BIOL), RARE, migration of aquatic organisms (MGR), SPWN, WQE, and FLD.

Southern Solar Energy Group

- Trona Solar Energy Development Area – Applicable existing and potential beneficial uses for the Trona SEDA include MUN, GWR, REC-1, REC-2, WARM, and WILD.

Eastern Solar Energy Group

- Chicago Valley Solar Energy Development Area – Applicable existing and potential beneficial uses for the Chicago Valley SEDA include MUN, AGR, GWR, REC-1, REC-2, WARM, WILD, and RARE.

- Charleston View Solar Energy Development Area – Applicable existing and potential beneficial uses for the Charleston View SEDA include MUN, AGR, GWR, FRSH, REC-1, REC-2, COMM, WARM, WILD, and RARE.

- Sandy Valley Solar Energy Development Area – Applicable existing and potential beneficial uses for the Sandy Valley SEDA include MUN, AGR, GWR, REC-1, REC-2, COMM, WARM, and WILD.

Water quality objectives identified in the Basin Plan are based on established beneficial uses and non-degradation policy requirements, and are defined in the Porter-Cologne Water Quality Control Act as "the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Beneficial uses are described above, while the non-degradation policy is generally intended to maintain existing water quality where it exceeds Basin Plan objectives. Water quality objectives for the Lahontan Basin include both narrative requirements (which can encompass qualitative and quantitative standards) and specific numeric objectives for identified contaminants and waters. Numeric water quality objectives for applicable surface waters in the County are summarized in Table 4.9-1. All groundwater resources in the Lahontan Basin with a MUN beneficial use are subject to narrative water quality objectives related to coliform bacteria, chemical constituents (e.g., drinking water standards), radioactivity and taste/odor. Groundwater resources with an AGR beneficial use are also required to limit chemical constituent levels so as not to adversely affect water use related to agriculture (RWQCB 1995).

The Basin Plan also includes a series of discharge prohibitions, including regional (basin-wide) and HU-specific prohibitions. These restrictions typically involve discharges such as untreated waste, wastewater or sewage effluent that would "…individually or collectively, directly or indirectly, adversely affect water quality or beneficial uses." As part of the related implementation strategy, the Basin Plan provides standards for discharges such as sewage effluent, septic systems, and solid/liquid wastes for areas not covered by NPDES municipal permits or individual WDRs, including individual locations/dischargers in the County. These standards provide criteria such as treatment measures, discharge/percolation restrictions (e.g., rates and locations), constituent limitations for applicable discharges, and monitoring/testing requirements.

Table 4.9-1
SURFACE WATER QUALITY OBJECTIVES FOR THE OWENS HYDROLOGIC UNIT

Surface Waters	Constituent (mg/l)[1,2]									
	TDS	Cl	SO_4	F	P	B	NO_3-N	TN	PO_4	NH_3
Rock Creek (Mosquito Flat)	10 11	1.0 2.0	--	0.05 0.05	--	0.03 0.03	0.2 0.3	0.2 0.4	0.04 0.07	--
Rock Creek (Round Valley)	48 70	1.8 4.0	5.0 7.0	0.16 0.30	--	0.03 0.06	0.4 0.5	0.6 0.7	0.15 0.28	--
Lake Sabrina	10 17	2.0 3.0	--	0.1 0.1	--	0.5 0.5	0.2 0.3	0.3 0.6	0.03 0.05	--
South Lake	12 20	3.7 4.3	--	0.10 0.10	--	0.02 0.02	0.1 0.1	0.2 0.4	0.03 0.04	--
Bishop Creek (Intake 2)	27 29	1.9 3.0	--	0.15 0.15	--	0.02 0.02	0.1 0.2	0.1 0.4	0.05 0.09	--
Bishop Creek (US 395)	59 105	2.4 6.0	7.2 12.0	0.12 0.30	--	0.04 0.10	0.6 0.9	0.7 1.0	0.03 0.04	--
Big Pine Creek (US 395)	55 93	2.0 4.0	6.0 10.0	0.06 0.20	--	0.03 0.07	0.6 0.9	0.7 1.0	0.03 0.04	--
Fish Springs (above hatchery)	174 219	--	--	--	--	--	0.7 0.8	0.8 1.0	0.17 0.23	--
Owens River (Tinemaha Reservoir outlet)	207 343	17.9 42.0	26.8 59.0	0.57 0.90	--	0.61 1.50	0.6 1.1	0.9 1.5	0.32 0.56	--
Black Rock Springs	114 123	6.3 8.0	24.0 27.0	0.54 0.60	--	0.11 0.14	0.2 0.4	0.7 0.9	0.13 0.20	--
Oak Creek (above hatchery)	72 88	1.8 1.8	--	0.14 0.14	--	0.06 0.06	0.1 0.2	0.2 0.4	0.08 0.12	--
Independence Creek (at gaging station)	80 114	6.5 11.0	15.0 23.0	0.10 0.20	--	0.12 0.26	0.4 0.8	0.6 1.0	0.05 0.89	--
Hogback Creek	45 48	2.5 3.6	--	0.10 0.10	--	0.03 0.06	0.2 0.3	0.4 0.6	0.02 0.04	--
Lone Pine Creek (Whitney Portal)	22 25	0.5 1.1	--	0.10 0.10	--	0.05 0.07	0.3 0.5	0.4 0.6	0.02 0.04	--
Lone Pine Creek (at gaging station)	56 81	4.0 8.0	4.6 7.0	0.12 0.20	--	0.06 0.11	0.3 0.4	0.4 0.5	0.01 0.01	--
Cottonwood Creek (Los Angeles Aqueduct)	66 91	1.9 4.0	7.4 11.0	0.20 0.40	--	0.05 0.10	0.1 0.4	0.4 0.6	0.11 0.17	--
South Haiwee Reservoir (outlet)	215 315	19.5 38.0	27.0 62.0	0.60 0.90	--	0.56 0.91	0.5 1.0	0.8 1.5	0.23 0.36	--
Pine Creek (US Tungsten Mine)	50	3	13	--	0.04	--	0.3	0.9	--	0.01
Pine Creek (Rovana Weir)	200	7	100	1.25	0.04	0.1	0.5	1.5	--	0.01

Source: RWQCB 1995

mg/l = milligrams per liter; TDS = total dissolved solids; Cl = chloride; SO_4 = sulfate; F = fluoride; P = total phosphorus; B = boron; NO_3-N= nitrate as nitrogen; TN = total nitrogen; PO_4 = orthophosphate, dissolved; NH_3 = ammonia (un-iodized).

[1] Values shown are the annual average value over the 90th percentile value, except for Pine Creek where values are given as the mean of the monthly mean for the period of record.

[2] Where numeric objectives are not shown, they are not established and Basin Plan narrative objectives apply.

SWRCB Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality

This order (No. 2003-0003-DWQ) is applicable to discharges from activities such as construction dewatering, although it also requires conformance with "…any more stringent standards in the applicable Basin Plan." Specifically, this permit regulates specified low threat discharges of waste to land with underlying groundwater, including well boring wastes, clear water discharges, small dewatering projects, and inert wastes.

RWQCB Waste Discharge Requirements for Land Disposal of Treated Groundwater

This order (No. R6T-2004-0015, WDID 6A099311007) is specifically intended to address hydrocarbon pollutants, and may be applicable to activities such as construction dewatering where associated treatment is required prior to disposal to meet applicable water quality requirements. Specifically, this permit regulates pollutants from ground water clean-up actions involving discharge to land with underlying groundwater. Primary pollutants covered are petroleum products and chlorinated hydrocarbon constituent residuals in treated waters.

Local Regulations

Inyo County General Plan

Safety Element

Section 9.3, Flood Hazards, in the Public Safety Element of the General Plan (2001, as amended) identifies a number of potential issues related to flood- and drainage-related issues, including protection from risks associated with 100-year flood zones. The principal goal identified to address these concerns, Goal FLD-1, is to "Provide adequate flood protection to minimize hazards and structural damage." Several associated policies and implementation measures are applicable to the proposed project, as summarized below.

- Policy FLD-1.1: Floodplain Limitations. This policy is intended to regulate development of habitable structures within FEMA floodplain zones, and areas within dam inundation zones. Associated implementation measures include efforts to: (1) collect and maintain data/maps depicting flood and inundation zones, and make these data available to the public; and (2) utilize applicable FEMA maps and related information in development reviews to ensure that habitable structures are precluded in mapped floodplains.

- Policy FLD-1.2: Development in Floodplains. This policy is intended to require proposed project applicants to demonstrate that development in floodplains will not adversely affect downstream properties. Associated implementation measures include efforts to preclude development in floodplains that would adversely affect floodway capacity/characteristics, natural/riparian areas, natural groundwater recharge areas, and on-site/downstream drainage patterns and associated ecological systems.

- Policy FLD-1.3: Mudflow Constraints. This policy is intended to discourage development within known or potential mudflow courses. Associated implementation measures include efforts to identify and map areas of known landslides and mudflows, and restrict development of habitable structures in such areas.

- Policy FLD-1.4: Channelization. This policy is intended to maintain the natural condition of water courses, discourage channelization unless required for public safety reasons, and require channelization efforts to preserve or restore the natural stream characteristics to the greatest extent possible. Associated implementation measures include efforts to work with applicable regulatory agencies to develop alternative solutions to flood control other than lined channels.

- Policy FLD-1.5: Maintenance of Levees. This policy requires that existing levees be maintained and/or upgraded as necessary to provide adequate flood protection. Associated implementation measures include identifying damaged and/or deficient levees and procuring funds to implement associated remedial efforts.

- Policy FLD-1.6: Storm Water Retention/Detention and Groundwater Recharge. This policy is intended to develop storm water retention/detention facilities and groundwater recharge areas to efficiently use storm water flows and direct such flows away from hazard areas. Associated implementation measures include efforts to work with applicable regulatory agencies to develop storm water retention/detention and recharge facilities to enhance flood protection and groundwater recharge capabilities.

- Policy FLD-1.7: Limit Surface Runoff. This policy requires that runoff from applicable development sites does not contribute to flooding hazards in downstream areas. Associated implementation policies include efforts to require on-site flow and velocity controls for applicable development projects when necessary to maintain existing flows and velocities in natural drainage systems.

Conservation/Open Space Element

Section 8.2, Soils, in the Conservation/Open Space Element of the General Plan identifies a number of potential issues related to soils, including protection from risks associated with soil erosion and development-related hazards on certain soil types. The principal goal identified to address these concerns is Goal S-2, "Recognize development limitations of soil types in review and approval of future development projects to protect public health and safety." Several associated policies and implementation measures are identified, as summarized below.

- Policy S-2.1: Soil Erosion. This policy is intended to minimize wind- and water-related erosion from new development. Associated implementation measures include efforts to develop guidelines under the County Zoning Code for grading-related erosion control.

- Policy S-2.3: Soil Instability. This policy is intended to limit the intensity of development in areas of unstable soils and/or steep terrain. Associated implementation measures include efforts to require erosion control measures for all grading activities.

Section 8.5, Water Resources, in the General Plan Conservation/Open Space Element identifies a number of potential issues related to surface and groundwater resources. The principal goals identified to address these concerns include: (1) Goal WR-1, "Provide an adequate and high Quality water supply to all users within the County."; (2) Goal WR-2, "Protect and preserve water resources for the maintenance, enhancement, and restoration of environmental, resources."; and (3) Goal WR-3, "Protect and restore environmental resources from the effects of export and withdrawal of water resources." Several associated policies and implementation measures are identified, with applicable guidelines summarized below.

- Policy WR-1.1: Water Provisions. This policy is intended to ensure adequate water availability through review of development proposals. Associated implementation measures include efforts to coordinate with applicable water agencies to ensure adequate water supplies and facilities are available to serve planned development.

- Policy WR-1.2: Domestic Groundwater. This policy is intended to support sustainable groundwater use in rural areas. Associated implementation measures include efforts to review development proposals involving groundwater withdrawals not regulated by the County Groundwater Ordinance or the County/LADWP Agreement to ensure an adequate, safe and economically viable groundwater supply.

- Policy WR-1.3: Water Reclamation. This policy is intended to encourage the use of reclaimed wastewater wherever feasible to augment groundwater supplies and conserve potable water. Associated implementation measures include efforts to support the development of reclaimed water systems.

- Policy WR-1.4: Regulatory Compliance. This policy is intended to continue the review of existing and proposed development to ensure compliance with applicable requirements under CWA, RWQCB, and local ordinances related to water quality. Associated implementation measures include efforts to review and monitor projects to ensure compliance with applicable requirements, and work with industry operators to reduce pollutant and wastewater discharge.

- Policy WR-2.1: Restoration. This policy is intended to encourage and support restoration of degraded surface and groundwater resources. Associated implementation measures include efforts to work with applicable agencies to develop a plan for restoration of the Owens River, identify other applicable waters requiring restoration, and provide associated funding and/or volunteer support.

- Policy WR-3.1: Watershed Management. This policy is intended to protect, maintain and enhance watersheds in the County. Associated implementation measures include efforts to coordinate with applicable agencies to provide watershed protection; and maintain adequate, safe and economically viable surface and groundwater supplies.

- Policy WR-3.2: Sustainable Groundwater Withdrawal. This policy is intended to manage groundwater resources within the County to ensure an adequate, safe and economically viable groundwater supply for existing and future development. Associated implementation measures include similar efforts as noted above for Policy WR-3.1.

Grading Ordinance (Ord. 409 [part], 1981)

Pursuant to ICC Title 16, Chapter 16.40, Section 16.40.030 (Grading and Stripping Restrictions), the following requirements are identified for grading operations:

> Where grading or filling or stripping of vegetation is not done concurrently with the final map or parcel map improvements and bonds required therefore, no grading or filling or stripping of vegetation within the boundaries of the subdivision shall be permitted until the advisory agency has given approval and has provided for any necessary interim erosion control and planting to protect adjoining private and public property and the general welfare, a grading permit has been issued in accordance with such conditions and the required grading bond has been filed.

Groundwater Ordinance (Ord. 1004 § 10, 1998: Ord. 943 § 4, 1994)

Pursuant to ICC Title 18, Chapter 18.77, Section 18.77.035 (Monitoring, Groundwater Management and Reporting), the following requirements are identified for groundwater resources:

> The county planning commission, in consideration of the relevant recommendations submitted by the water commission, shall approve and incorporate, as appropriate, a monitoring, groundwater management and/or reporting program into each conditional use permit it grants for a transfer or transport of water described in Section 18.77.010(A). The monitoring, groundwater management and/or reporting program shall be of such scope and extent as the commission finds to be necessary to ensure that the proposed water transfer will not unreasonably affect the overall economy or the environment of the county. In determining the scope of a monitoring, groundwater management and/or reporting program, the ability of the proposed program to detect and avoid potential significant adverse effects before such effects occur shall be considered. The monitoring and/or reporting portion of the program shall be in compliance with Chapter 15.44 of this code.[2] The groundwater management and/or reporting program may include, but shall not be limited to, instream flow measurements, reports of the amounts of surface water diverted and/or amounts of groundwater pumped, monitoring of wells, monitoring of groundwater levels, monitoring of spring and seeps, monitoring of vegetation, wildlife, fish and economic effects and thresholds and/or trigger points which, if reached, will control the extraction of groundwater.

Groundwater Extraction Permit Ordinance (Ord. 394 § 1, 1980)

Pursuant to ICC Title 7, Chapter 7.01, Section 7.01.040 (Permit-Required), the following requirements are identified for groundwater extraction:

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[2] Title 15 (CEQA Procedures), Chapter 15.44 (Mitigation Monitoring and Reporting Program).

> No person, firm, corporation or governmental agency (except an agency of the US government to the extent federal law preempts this chapter), shall within the Owens Valley Groundwater Basin extract water from that basin by any artificial means without first obtaining a written permit as provided for in this chapter.

The referenced ordinance also includes requirements related to the 1991 County/LADWP Groundwater Agreement. Under this agreement, groundwater transfers by LADWP are subject to an "On/Off" provision, which is based on monitoring of local criteria including vegetation cover, soil moisture, aquifer depths at selected well sites in Owen Valley, pump data, stream flows, precipitation data, and groundwater use on LADWP-owned land. The noted agreement is intended to avoid "groundwater mining," which is defined therein as total groundwater pumping from a well field within a 20-year period that exceeds the total recharge within the same period (Aspen Environmental Group 2014).

Well Abandonment Ordinance (Ord. 309 § 3, 1976)

Pursuant to ICC Title 14, Chapter 14.28, Section 14.28.130 (Abandoned or Unused Wells), the following requirements are identified for well abandonment:

A. The owner of an abandoned well must, within thirty days, destroy it in accordance with the standards contained in Section 14.28.100 of the County Code (i.e., Chapter II of DWR Bulletin No. 74, Water Well Standards: state of California, and Chapter II of DWR Bulletin No. 74-1, Cathodic Protection Well Standards: state of California (with certain exceptions as noted in Section 14.28.100).

B. The owner of a well, the use of which has been or is soon to be discontinued, must apply to the County, in writing, declaring his intention to use the well again for its original or other approved purpose. The County shall review such a declaration and grant an exemption from the requirement that it be destroyed, provided no undue hazard to health or safety is created by the continued existence of the well. Such an exemption must be applied for every 5 years and may be terminated for cause by the County at any time.

Flood Damage Prevention Ordinance (Ord. 1076 § 2 [part], 2004)

Pursuant to ICC Title 14, Chapter 14.29, Section 14.29.040 (Methods of Reducing Flood Losses), the following requirements are identified for flood damage prevention:

A. Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

C. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

D. Control filling, grading, dredging, and other development which may increase flood damage; and

E. Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Water Quality Ordinance (Ord. 29 § 1, 1948)

Pursuant to ICC Title 7, Chapter 7.16, Section 7.17.010 (Restrictions), the following requirements are identified in relation to water quality standards:

It is unlawful for any person, or persons, or association of persons to:

A. Place, deposit, dump or dispose of, or cause to be placed, deposited, dumped or disposed of, upon the right-of-way of any street or thoroughfare, or upon any camping place or public park, or into any stream or dry watercourse, or on the banks of any stream or dry watercourse, within the county, any debris, refuse, garbage, swill, junk, cans, bottles, rubbish, papers, ashes, or other unsightly, putrescible, decaying or offensive matter of any kind whatsoever, whether organic or inorganic;

B. Bathe, swim, wash, launder clothes, wash dishes or any other object or thing, in any stream or watercourse within Inyo County, or by any other means foul or pollute the waters of such stream in any manner whatsoever.

4.9.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on hydrology and water quality if it would result in any of the following:

- Substantially alter the existing drainage patterns or storm water flows of the site or area, in a manner that would substantially affect downstream drainage patterns or flows, increase the rate or amount of surface runoff, generate erosion/sedimentation, or result in flooding on- or off-site.
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-yerar flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or inundation by seiche, tsunami or mudflow.

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.
- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality.

4.9.3 Impact Analysis

The REGPA is designed to minimize impacts regarding hydrology and water quality by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact hydrology and water quality.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provisions for development of small scale solar energy facilities However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to hydrology and water quality against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the hydrology and water quality analysis conducted for the project.

4.9.3.1 Western Solar Energy Group

Laws Solar Energy Development Area

Drainage Patterns/Flow Directions

Surface drainage within the Laws SEDA and adjacent areas is primarily to the west and southwest through a number of unnamed ephemeral washes and artificial drainage channels, with all associated flows ultimately entering the Owens River or associated tributaries (including Bishop Creek in the site vicinity). Implementation of a solar energy project would have the potential to result in some modification of the existing on-site drainage patterns and directions through proposed grading and construction. These modifications are generally not anticipated to be substantial, based on the nature and extent of the proposed development. Specifically, development within the 11,655-acre Laws SEDA would include facilities such as solar arrays, a substation, access roads, and related structures and infrastructure on up to 120 acres (or approximately one percent of the total SEDA area). Accordingly, overall drainage patterns within the SEDA (i.e., west and southwest to Bishop Creek and the Owens River) are not anticipated to be substantially altered by proposed development. Because the exact locations of the noted facilities have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the SEDA cannot be determined. As a result, while overall drainage and flow pattern alterations are not anticipated to be substantial as noted, associated potential impacts to individual drainage courses and channels are unknown and could potentially result in significant impacts related to local channel or wash diversions and associated erosion and/or flooding issues. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails completion of site-specific hydrologic analyses for proposed development to evaluate potential impacts, including drainage alteration and related issues, and to identify associated remedial measures.

<u>Runoff Rates/Amounts and Storm Water Management</u>

Proposed development within the Laws SEDA is not expected to substantially increase the rate or amount of surface runoff within or from the site. This conclusion is based on the relatively small extent of proposed on-site development (approximately one percent of the total SEDA area as previously noted), as well as the nature of associated facilities. Specifically, solar development typically does not encompass extensive areas of new impervious surfaces (which increase runoff rates and amounts), with such areas generally limited to locations including concrete pads and foundations for substation facilities, solar panel support posts, and associated structures (e.g., small maintenance/storage buildings). Most other portions of the proposed development (including access roads and parking areas) are expected to remain permeable, and would encompass natural surfaces or be capped with materials such as gravel or decomposed granite. Based on the noted conclusions and assumptions, potential impacts related to runoff rates and amounts from proposed development at the Laws SEDA are expected to be less than significant. However, as noted above under the discussion of Drainage Patterns/Flow Directions, mitigation in the form of site-specific hydrologic analyses would be conducted for the Laws SEDA. Because assessment of pre- and post-development runoff rates is a standard element of such hydrologic analysis, these conditions would be evaluated as part of the Laws SEDA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

<u>Flooding/Floodplain Hazards</u>

As described above in Section 4.9.1, several mapped 100-year floodplains are located within or adjacent to the Laws SEDA (Figure 4.9-2). Because no housing is proposed as part of the project development, no associated impacts related to locating such structures within flood hazard areas would result from project implementation. Additionally, based on the relatively minor extent of the noted floodplains and the fact that development within the Laws SEDA would be limited to approximately one percent of the total SEDA area (as described above under

Drainage Patterns/Flow Directions), no associated potential impacts are anticipated in relation to locating proposed facilities within or adjacent to mapped floodplains. Because the exact locations of the noted facilities have not been identified, however, associated site-specific effects related to floodplains and flood flows cannot be determined. As a result, while proposed facilities are anticipated to be located outside of mapped floodplains as noted above, associated potential effects are unknown and could potentially result in significant impacts related to the location of facilities within mapped floodplains and associated effects such as impeding or redirecting flood flows. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails completion of site-specific hydrologic analyses for proposed development to evaluate potential impacts, including floodplain-related issues, and to identify associated remedial measures.

As noted above in Section 4.9.1, the County General Plan Safety Element includes policies associated with flood hazards related to potential dam inundation (refer to Policy FLD-1.1: Floodplain Limitations). The Laws SEDA is located downstream from several large reservoirs (Crowley Lake, Lake Sabrina, and South Lake) and could potentially be subject to associated dam inundation hazards. Because larger containment structures, such as the Crowley Lake Dam, are subject to extensive design, construction, inspection and safety criteria through the California Division of Safety of Dams, however, the probability for inundation from a catastrophic event (e.g., earthquake-induced failure) is considered extremely low. Based on these conditions, as well as the fact that project implementation would not increase the potential for dam-related inundation, associated potential impacts to individuals and facilities within the Laws SEDA would be less than significant.

<u>Existing or Planned Storm Drain System Capacity</u>

Based on to the above discussion of Runoff Rates/Amounts and Storm Water Management, proposed solar development within the Laws SEDA is not anticipated to generate substantial additional surface flows. Accordingly, associated potential impacts related to the capacity of existing or planned storm drain systems are expected to be less than significant. As previously noted, however, mitigation in the form of site-specific hydrologic analyses would be conducted for the Laws SEDA. Because assessment of pre- and post-development runoff rates and related effects to storm drain systems is a standard element of such hydrologic analysis, these conditions would be evaluated as part of the Laws SEDA hydrologic investigation. Accordingly, if adverse issues related to post-development flows and storm drain capacity are identified during this investigation, associated remedial measures would be implemented to address these issues.

<u>Groundwater Supplies/Recharge</u>

The majority of the Laws SEDA is located within the areal extent of the Owens Valley Groundwater Basin. Depending on the nature of proposed solar development, associated water needs could vary substantially (refer to Table 3-2, and could potentially involve groundwater withdrawals from the Owens Valley Basin. Although such use is anticipated to be minor, because the extent of such potential groundwater use is unknown, associated effects to local aquifers cannot be determined and are considered potentially significant. Associated mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails completion of site-specific groundwater analyses if applicable (i.e., if groundwater withdrawal is proposed), to evaluate potential impacts and identify associated remedial measures.

Based on the discussion above under Runoff Rates/Amounts and Storm Water Management, project implementation would not be expected to result in substantial areas of new impervious surfaces, with associated potential impacts to on-site groundwater recharge capacity anticipated to be less than significant. As previously noted, however, mitigation in the form of site-specific groundwater analyses would be conducted for the Laws SEDA. Because assessment of recharge capacity is a standard element of such analysis, these conditions would be evaluated as part of the Laws SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

<u>Water Quality</u>

Potential water quality impacts from solar facility development at the Laws SEDA are associated with both short-term construction activities and long-term operation and maintenance. Specifically, potential short-term effects are related to erosion and off-site sediment transport (sedimentation), the use and storage of construction-related hazardous materials (e.g., fuels and lubricants), and the extraction/disposal of shallow groundwater (dewatering) if required. Potential long-term water quality effects are associated predominantly with the on-site use and storage of materials such as hydraulic fluids, oil and grease, cleaning solutions/solvents, and storage batteries.

Proposed solar facility development at the Laws SEDA would not involve activities that could result in direct potential impacts to groundwater quality, such as the use of septic systems or underground storage of hazardous materials (e.g., fuel tanks). Accordingly, development-related activities that could potentially affect groundwater quality are limited to the percolation of surface runoff and associated pollutants, with the following assessment of potential water quality impacts therefore applicable to both surface and groundwater resources.

Construction-related Pollutants

<u>Erosion/Sedimentation</u>. Proposed excavation, grading and construction activities in the Laws SEDA could potentially result in related erosion and sedimentation. Specifically, project activities could involve the removal of surface stabilizing features such as vegetation, excavation of existing compacted materials from graded or cut areas, redeposition of excavated material as fill in proposed development sites and, potentially, disposal of extracted groundwater onto graded or unstable areas (i.e., during construction dewatering). Project-related erosion could result in the influx of sediment into downstream receiving waters, including Bishop Creek and the Owens River, with associated water quality effects such as turbidity and transport of other pollutants that tend to adhere to sediment particles (e.g., hydrocarbons). While graded, excavated and filled areas associated with construction activities would be stabilized through efforts such as compaction and installation of solar facilities, erosion potential would be higher in the short-term than for existing conditions. Developed areas would be especially susceptible to erosion between the beginning of grading/construction and the installation of permanent features. Erosion and sedimentation are not considered to be significant long-term concerns for

development within the Laws SEDA, with developed areas to be stabilized as noted. On-site solar facility operation may also incorporate long-term measures that would avoid or reduce off-site sediment transport, based on the results of detailed hydrologic investigations as described above and in Section 4.9.5. Specifically, this could potentially include the use of facilities such as detention/retention basins and energy dissipators, as well as drainage facility maintenance (i.e., to remove accumulated sediment).

In addition to the water-related erosion potential described above, construction activities at the Laws SEDA may potentially be subject to wind-generated erosion. While such effects are generally smaller in scale and magnitude than water-related erosion, similar potential impacts to on- and off-site water quality may occur.

As outlined above, short-term (construction) water quality effects from water and wind-related erosion and sedimentation during solar facility development at the Laws SEDA could potentially affect downstream water quality and associated resources such as wildlife habitat. These potential impacts would be addressed through conformance with the NPDES Construction General Permit and associated County standards, as described above in Section 4.9.1.3. This would include implementing one or more authorized SWPPPs (e.g., for individual development areas) for proposed construction, including (but not limited to) erosion and sedimentation BMPs. While specific BMPs would be determined during the NPDES/SWPPP process based on regulatory criteria and site characteristics (soils, slopes, etc.), they would likely include standard industry measures and guidelines from the NPDES Construction General Permit and County standards, as well as the additional sources identified in Section 4.9.1.3. A summary of standard erosion and sedimentation BMPs that may be applicable to development within the Laws SEDA is provided below. Based on the implementation of these and/or other appropriate erosion and sediment control BMPs as part of (and in conformance with) the project SWPPPs and related regulatory requirements, associated potential erosion/sedimentation impacts from project development at the Laws SEDA would be less than significant. Erosion and sedimentation controls implemented for the Laws SEDA would be further defined during the NPDES/SWPPP process, with the resulting BMPs taking priority over the more general types of standard industry measures listed below.

- Comply with seasonal grading restrictions during the rainy season for applicable locations/conditions.

- Prepare and implement a Construction Site Monitoring Program to ensure appropriate monitoring, testing, BMP effectiveness, and conformance with applicable discharge requirements.

- Prepare and implement a Rain Event Action Plan, if applicable (i.e., depending on risk level), to ensure that active construction areas/activities have adequate erosion and sediment controls in place within 48 hours of the onset of any likely precipitation event (i.e., 50 percent or greater probability of producing precipitation, per National Oceanic and Atmospheric Administration projections).

- Preserve existing vegetation wherever feasible, and use phased grading schedules to limit the area subject to erosion at any given time.

- Properly manage storm water and non-storm water flows to minimize runoff.
- Use erosion control/stabilizing measures such as geotextiles, mulching, mats, plastic sheets/tarps, fiber rolls, soil binders, compost blankets, soil roughening and/or temporary hydroseeding (or other plantings) established prior to October 1 in appropriate areas (e.g., disturbed areas and graded slopes).
- Use sediment controls to protect the construction site perimeter and prevent off-site sediment transport, including measures such as temporary inlet filters, silt fence, fiber rolls, silt dikes, biofilter bags, gravel bag berms, compost bags/berms, temporary sediment basins, check dams, street sweeping/vacuuming, advanced treatment systems (if applicable based on risk assessment), energy dissipators, stabilized construction access points/sediment stockpiles and properly fitted covers for sediment transport vehicles.
- Store BMP materials in applicable on-site areas to provide “standby” capacity adequate to provide complete protection of exposed areas and prevent off-site sediment transport.
- Provide full erosion control for disturbed areas and material stockpiles not scheduled for additional activity for 14 or more consecutive calendar days.
- Provide appropriate training, including emergency preparedness training, for the personnel responsible for BMP installation and maintenance.
- Use solid waste management efforts such as proper containment and disposal of construction trash and debris.
- Comply with local dust control requirements, potentially including measures such as regular watering, use of chemical palliatives, limiting construction vehicle/equipment speeds and restricting/precluding construction operations during periods of high wind speeds.
- Install permanent landscaping (if applicable), with emphasis on native and/or drought-tolerant varieties, as soon as feasible during or after construction.
- Implement appropriate monitoring and maintenance efforts (e.g., prior to and after storm events) to ensure proper BMP function and efficiency.
- Implement sampling/analysis, monitoring/reporting and post-construction management programs per NPDES and/or County requirements.
- Implement additional BMPs as necessary to ensure adequate erosion and sediment control (e.g., enhanced treatment and more detailed monitoring/reporting).

<u>Construction-related Hazardous Materials</u>. Construction related to solar facility development within the Laws SEDA would involve the use and/or storage of hazardous materials such as fuels, lubricants, solvents, concrete, paint, trash/debris, and portable septic system wastes. The accidental discharge of such materials during construction could potentially result in significant

impacts if these pollutants reach downstream receiving waters, particularly materials such as petroleum compounds that are potentially toxic to aquatic species in low concentrations. Implementation of one or more SWPPPs would be required under NPDES and County guidelines as previously noted, and would include specific measures to avoid or reduce potential impacts related to the use and potential discharge of construction-related hazardous materials. While detailed BMPs would be determined as part of the NPDES/SWPPP process based on regulatory criteria and project-specific parameters, they are likely to include standard industry measures and guidelines from the NPDES Construction General Permit and County requirements, as well as the additional sources identified in Section 4.9.1.3. A summary of anticipated construction-related hazardous material BMPs that would be applicable to development at the Laws SEDA is provided below. Based on the implementation of these and/or other appropriate hazardous material BMPs as part of (and in conformance with) the SWPPPs and related requirements, associated impacts would be less than significant. Construction-related hazardous materials controls implemented for development at the Laws SEDA would be further defined during the NPDES/SWPPP process, with the resulting BMPs taking priority over the more general types of standard industry measures provided below.

- Minimize the amount of hazardous materials used and stored on site, and restrict storage/use locations to areas at least 50 feet from storm drains and surface waters.
- Use raised (e.g., on pallets), covered and/or enclosed storage facilities for all hazardous materials.
- Maintain accurate and up-to-date written inventories and labels for all stored hazardous materials.
- Use berms, ditches, impervious liners and/or other applicable methods in material storage and vehicle/equipment maintenance and fueling areas, to provide a containment volume of 1.5 times the volume of stored/used materials and prevent discharge in the event of a spill.
- Place warning signs in areas of hazardous material use or storage and along drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal.
- Properly maintain all construction equipment and vehicles.
- Restrict paving operations during wet weather, use appropriate sediment control devices/methods downstream of paving activities, and properly contain and dispose of wastes and/or slurry from sources including concrete and paint, by using properly designed and contained washout areas.
- Provide training for applicable employees in the proper use, handling and disposal of hazardous materials, as well as appropriate action to take in the event of a spill.
- Store absorbent and clean-up materials in readily accessible on-site locations.

- Properly locate, maintain and contain portable wastewater facilities.

- Regularly (at least weekly) monitor and maintain hazardous material use/storage facilities and operations to ensure proper working order.

- Implement solid waste management efforts such as proper containment and disposal of construction trash and debris, and restrict associated storage areas to appropriate locations at least 50 feet from storm drain inlets and water courses.

- Employ a licensed waste disposal operator to regularly (at least weekly) remove and dispose of construction trash and debris at an authorized off-site location.

- Use recycled or less hazardous materials wherever feasible.

- Post regulatory agency telephone numbers and a summary guide of clean-up procedures in a conspicuous on-site location.

- Implement additional BMPs as necessary (and in conformance with applicable requirements) to ensure adequate hazardous material control.

Disposal of Extracted Groundwater. Shallow groundwater could potentially be encountered during solar facility development at the Laws SEDA, as previously described. Disposal of groundwater extracted during construction activities (if required) could potentially generate significant water quality impacts through erosion/sedimentation, as well as the possible occurrence of pollutants in local groundwater aquifers. Project construction would require conformance with applicable RWQCB/SWRCB criteria prior to disposal of extracted groundwater, as outlined in Section 4.9.1.3. While specific requirements to address potential water quality concerns from disposal of extracted groundwater would be determined based on regulatory criteria and site-specific parameters, they would likely include the types of standard measures outlined below.

- Use erosion and sediment controls similar to those described for NPDES/SWPPP compliance in applicable areas/conditions (e.g., disposal of extracted groundwater on slopes or graded areas).

- Test extracted groundwater for appropriate contaminants prior to discharge.

- Treat extracted groundwater prior to discharge, if required, to provide conformance with applicable discharge criteria (e.g., through methods such as filtration, aeration, adsorption, disinfection and/or conveyance to a municipal wastewater treatment plant).

Based on the required conformance with regulatory standards and the implementation of related measures, water quality impacts from disposal of extracted groundwater at the Laws SEDA would be less than significant.

Operational Pollutants

The long-term operation and maintenance of solar facilities typically do not entail the generation of pollutants associated with most types of urban development, such as nutrients, trash and debris, hydrocarbons, oxygen demanding substances, bacteria and viruses, and pesticides. Specifically, solar facilities do not entail on-site habitation or associated uses such as substantial vehicular activity and landscaping that can generate such pollutants. Solar activities may, however, involve the use of potential pollutants such as hydraulic fluids, oil and grease, cleaning solutions/solvents, and storage batteries. The potential for long-term water quality issues associated with solar operations and the noted pollutant types is considered generally low due to their limited use and extent, the nature of solar facility operation (as previously noted), and requirements for hazardous material controls provided under other (non-storm water) standards (refer to Section 4.8). Because the exact nature and location of potential solar facilities have not been identified, however, the associated site-specific effects to long-term water quality cannot be determined. As a result, while overall long-term water quality concerns are not anticipated to be substantial as noted above, associated potential impacts are unknown and could potentially result in significant long-term water quality impacts. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails completion of site-specific water quality analyses for proposed development to evaluate potential impacts and identify associated remedial measures.

Owens Lake Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Owens Lake SEDA are similar to those described above for the Laws SEDA, with solar facility development potentially to occur on up to 900 acres within the 89,247-acre SEDA (or approximately one percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the SEDA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Owens Lake SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Owens Lake SEDA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Based on the on-site presence of mapped 100-year floodplains, potential impacts related to flood hazards for the Owens Lake SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to dam inundation at the Owens Lake SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Owens Lake SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Owens Lake SEDA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Owens Lake SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Owens Lake SEDA are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Owens Lake SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/ sedimentation and construction-related hazardous materials) for the Owens Lake SEDA are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Owens Lake SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Rose Valley Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Rose Valley SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 24,644-acre SEDA (or approximately 2.5 percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the SEDA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Rose Valley SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Rose Valley SEDA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Potential impacts related to flood hazards for the Rose Valley SEDA would be less than significant, based on the fact that no mapped FEMA 100-year floodplains are located therein. Potential impacts related to dam inundation at the Rose Valley SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Rose Valley SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Rose Valley SEDA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Rose Valley SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Rose Valley SEDA are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Rose Valley SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/ sedimentation and construction-related hazardous materials) for the Rose Valley SEDA are similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Rose Valley SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Pearsonville Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Pearsonville SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 4,469-acre SEDA (or approximately 13.5 percent of the total SEDA area). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the SEDA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Pearsonville SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Pearsonville SEDA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Potential impacts related to flood hazards for the Pearsonville SEDA would be less than significant, based on the fact that no mapped FEMA 100-year floodplains are located therein. Potential impacts related to dam inundation at the Pearsonville SEDA would be less than significant, for similar reasons as described above for the Laws SEDA.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Pearsonville SEDA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Pearsonville SEDA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Pearsonville SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Pearsonville SEDA are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Pearsonville SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/sedimentation and construction-related hazardous materials) for the Pearsonville SEDA are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Pearsonville SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Owens Valley Study Area

<u>Drainage Patterns/Flow Directions</u>

Potential impacts related to drainage alteration for the OVSA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 1,500 acres within the 369,824-acre Study Area (or less than 1 percent of the total OVSA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the OVSA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

<u>Runoff Rates/Amounts and Storm Water Management</u>

Potential impacts related to runoff rates and amounts for the OVSA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the OVSA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

<u>Flooding/Floodplain Hazards</u>

Based on the on-site presence of mapped 100-year floodplains, potential impacts related to flood hazards for the OVSA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. Potential impacts related to dam inundation within the OVSA would be less than significant, for similar reasons as described above for the Laws SEDA.

<u>Existing or Planned Storm Drain System Capacity</u>

Potential impacts related to storm drain capacity for the OVSA are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the OVSA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

<u>Groundwater Supplies/Recharge</u>

Potential impacts related to groundwater supplies for the OVSA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in

Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the OVSA are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the OVSA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/ sedimentation and construction-related hazardous materials) for the OVSA are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the OVSA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

4.9.3.2 Southern Solar Energy Group

Trona Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Trona SEDA and associated potential off-site transmission corridor are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 600 acres within the 4,550-acre SEDA (or approximately 13.2 percent of the total SEDA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the Trona SEDA and off-site transmission corridor would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Trona SEDA and associated potential off-site transmission corridor are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Trona SEDA/ transmission corridor hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Potential impacts related to flood hazards for the Trona SEDA would be less than significant, based on the fact that no mapped FEMA 100-year floodplains are located therein. Potential impacts related to dam inundation at the Trona SEDA would be less than significant, based on similar reasons as described above for the Laws SEDA, as well the fact that no dam inundation zones are anticipated to occur within or adjacent to the Trona SEDA. Based on the described presence of mapped 100-year floodplains within the potential off-site transmission corridor, associated potential impacts related to flood hazards are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. Potential impacts related to dam inundation within the potential off-site transmission corridor would be less than significant, for similar reasons as described above for the Trona SEDA.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Trona SEDA and associated potential off-site transmission corridor are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Trona SEDA/transmission corridor hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Trona SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Trona SEDA and the potential off-site transmission line corridor are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Trona SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/ sedimentation and construction-related hazardous materials) for the Trona SEDA and the potential off-site transmission line corridor are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Trona SEDA and the potential off-site transmission line corridor are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

4.9.3.3 Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Chicago Valley SEDA and the potential off-site transmission line corridor are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 300 acres within the 1,551-acre SEDA (or approximately 19.3 percent of the total SEDA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the Chicago Valley SEDA and transmission corridor would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Chicago Valley SEDA and the potential off-site transmission line corridor are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Chicago Valley SEDA/transmission corridor hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Potential impacts related to flood hazards for the Chicago Valley SEDA would be less than significant, based on the fact that no mapped FEMA 100-year floodplains are located therein.

Potential impacts related to dam inundation at the Chicago Valley SEDA would be less than significant, based on similar reasons as described above for the Laws SEDA, as well the fact that no dam inundation zones are anticipated to occur within or adjacent to the Chicago Valley SEDA. Based on the described presence of mapped 100-year floodplains within the potential off-site transmission corridor, associated potential impacts related to flood hazards are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. Potential impacts related to dam inundation within the potential off-site transmission corridor would be less than significant, for similar reasons as described above for the Chicago Valley SEDA.

<u>Existing or Planned Storm Drain System Capacity</u>

Potential impacts related to storm drain capacity for the Chicago Valley SEDA and associated potential off-site transmission corridor are similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Chicago Valley SEDA/transmission corridor hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

<u>Groundwater Supplies/Recharge</u>

Potential impacts related to groundwater supplies for the Chicago Valley SEDA are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Chicago Valley SEDA and the potential off-site transmission line corridor are also similar to those described above for the Laws SEDA, and are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Chicago Valley SEDA/transmission corridor groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

<u>Water Quality</u>

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/sedimentation and construction-related hazardous materials) for the Chicago Valley SEDA and the potential off-site transmission line corridor are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Chicago Valley SEDA and the potential off-site transmission line corridor are similar to those described above for the Laws SEDA, and would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Charleston View Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Charleston View SEDA (and the potential off-site transmission line corridor) are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to 2,400 acres within the 39,697-acre SEDA (or approximately 6 percent of the total SEDA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the Charleston View SEDA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Charleston View SEDA (and potential off-site transmission line corridor) are similar to those described above for the Laws SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Charleston View SEDA (and potential off-site transmission line corridor) hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Based on the on-site presence of mapped 100-year floodplains, potential impacts related to flood hazards for the Charleston View SEDA (and the potential off-site transmission line corridor) are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. Potential impacts related to dam inundation at the Charleston View SEDA and potential off-site transmission line corridor would be less than significant. This conclusion is based on similar reasons as described above for the Laws SEDA, as well the fact that no dam inundation zones are anticipated to occur within or adjacent to the Charleston View SEDA or off-site transmission line corridor.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Charleston View SEDA (and the potential off-site transmission line corridor) are similar to those described above for the Laws

SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Charleston View SEDA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Charleston View SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Charleston View SEDA (and the potential off-site transmission line corridor) are also similar to those described above for the Laws SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Charleston View SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/sedimentation and construction-related hazardous materials) for the Charleston View SEDA (and the potential off-site transmission line corridor) are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Charleston View SEDA (and the potential off-site transmission line corridor) are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Sandy Valley Solar Energy Development Area

Drainage Patterns/Flow Directions

Potential impacts related to drainage alteration for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, with solar development potentially to occur on up to

600 acres within the 3,097-acre SEDA (or approximately 19.4 percent of the total SEDA). Because the exact nature and location of this development have not been identified, however, the associated site-specific effects to drainage patterns and flow directions within and from the Sandy Valley SEDA would be potentially significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Runoff Rates/Amounts and Storm Water Management

Potential impacts related to runoff rates and amounts for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of pre- and post-development runoff rates is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Sandy Valley SEDA hydrologic investigations. Accordingly, if adverse issues related to runoff rates and amounts are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Flooding/Floodplain Hazards

Based on the on-site presence of mapped 100-year floodplains, potential impacts related to flood hazards for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA. Potential impacts related to dam inundation at the Sandy Valley SEDA would be less than significant, based on similar reasons as described above for the Laws SEDA, as well the fact that no dam inundation zones are anticipated to occur within or adjacent to the Sandy Valley SEDA.

Existing or Planned Storm Drain System Capacity

Potential impacts related to storm drain capacity for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of storm drain capacity is a standard element of hydrologic analysis, these conditions would be evaluated as part of the Sandy Valley SEDA hydrologic investigations. Accordingly, if adverse issues related to storm drain systems are identified during these investigations, associated remedial measures would be implement to address these conditions.

Groundwater Supplies/Recharge

Potential impacts related to groundwater supplies for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

Potential impacts related to groundwater recharge capacity for the Sandy Valley SEDA are also similar to those described above for the Laws SEDA, and associated potential impacts are anticipated to be less than significant. As described for the Laws SEDA, however, because assessment of recharge capacity is a standard element of groundwater analysis, these conditions would be evaluated as part of the Sandy Valley SEDA groundwater investigations. Accordingly, if adverse issues related to groundwater recharge capacity are identified during these investigations, associated remedial measures would be implemented to address these conditions.

Water Quality

Construction-related Pollutants

Potential impacts associated with construction-related pollutants (including erosion/ sedimentation and construction-related hazardous materials) for the Sandy Valley SEDA are also similar to those described above for the Laws SEDA. Specifically, associated potential impacts would be less than significant based on mandatory project conformance with applicable regulatory requirements including the NPDES Construction General Permit and related County standards.

Operational Contaminates

Potential long-term operational water quality concerns for the Sandy Valley SEDA are similar to those described above for the Laws SEDA, and associated potential impacts would be significant. Mitigation is identified below in Section 4.9.5 to address these potential impacts, and entails similar measures as noted above for the Laws SEDA.

4.9.4 Level of Significance before Mitigation

Based on the analyses in Section 4.9.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to: (1) drainage alteration; (2) flood hazards; (3) groundwater resources; and (4) long-term water quality. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to hydrology and water quality when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present and the technology used. Small scale projects are typically considered to result in no impacts under CEQA.

4.9.5 Mitigation Measures

Hydrology and water quality mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to hydrology and water quality. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA

Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on hydrology and water quality and would not require a hydrologic investigation or implementation of the hydrology and water quality mitigation measures listed in this section. In such cases, the County shall document that no impacts to geology and soils would occur and no mitigation measures are necessary in lieu of the hydrological investigation required in Mitigation Measure HYD-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact hydrology and water quality, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.9.3 and 4.9.4, implementation of solar energy projects under the REGPA could result in potentially significant impacts related to hydrology and water quality. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to hydrology and water quality, and may reduce them to below a level of significance in most cases.

MM HYD-1: Conduct site-specific hydrologic investigations.

Site-specific hydrologic investigations will be completed for proposed utility scale solar facility development projects within the individual SEDAs and the OVSA (i.e., those with grading, excavation or other activities potentially affecting hydrologic conditions, as determined by the County), as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. All applicable results and recommendations from these investigations will be incorporated into the associated individual final project design documents to address identified potential hydrologic concerns, including but not necessarily limited to: drainage alteration, runoff rates and amounts, flood hazards, and existing/planned storm drain system capacity. The final project design documents will also encompass applicable standard design and construction practices from sources including NPDES and County standards, as well as the results/recommendations of County plan review (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications). A summary of the types of remedial measures typically associated with identified potential hydrologic concerns, pursuant to applicable regulatory and industry standards (as noted), is provided below. The remedial measures identified/recommended as part of the described site-specific hydrologic investigations will take priority over the more general types of standard regulatory/industry measures listed below.

- Drainage Alteration: (1) locate applicable facilities outside of surface drainage courses and drainage channels; (2) re-route surface around applicable facilities, with such re-routing to be limited to the smallest area feasible and re-routed drainage to be directed back to the original drainage course at the closest feasible location (i.e., the closest location to the point of diversion); and (3) use drainage structures to convey flows within/through development areas and maintain existing drainage patterns.

- Runoff Rates and Amounts: (1) minimize the installation of new impervious surfaces (e.g., by surfacing with pervious pavement, gravel or decomposed granite); and (2) use flow regulation facilities (e.g., detention/retention basins) and velocity control structures (e.g., riprap dissipation aprons at drainage outlets), to maintain pre-development runoff rates and amounts.

- Flood Hazards: (1) work to locate proposed facilities outside of mapped 100-year floodplain boundaries; (2) based on technical analyses such as Hydrologic Engineering Center-River Analysis System (HEC-RAS) studies, restrict facility locations to avoid adverse impacts related to impeding or redirecting flood waters; and (3) based on HEC-RAS studies, use measures such as raised fill pads to elevate proposed structures above calculated flood levels, and/or utilize protection/containment structures (e.g., berms, barriers or waterproof doors) to avoid flood damage.

- Storm Drain System Capacity: (1) implement similar measures as noted above for runoff rates and amounts; and (2) utilize additional and/or enlarged facilities to ensure adequate on- and off-site storm drain system capacity.

MM HYD-2: Conduct site-specific groundwater investigations.

Site-specific groundwater investigations will be completed for all proposed solar facility development projects within the individual SEDAs and the OVSA proposing to utilize groundwater resources, prior to final project design approval. These investigations will identify site-specific criteria related to considerations such as local aquifer volumes and hydrogeologic characteristics, current/proposed withdrawals, inflow/recharge capacity, and potential effects to local aquifer and well levels from proposed project withdrawals. All applicable results and recommendations from these investigations will be incorporated into the associated individual project design documents to address identified potential impacts to groundwater resources (per applicable regulatory standards), with all related requirements to be included in associated engineering/design drawings and construction contract specifications. A summary of the types of remedial measures typically associated with identified potential effects to groundwater resources is provided below. The remedial measures identified/recommended as part of the described site-specific groundwater investigations will take priority over the more general types of standard measures listed below.

- Aquifer/Well drawdown: (1) monitor local aquifer and private/production well levels to verify the presence or absence of project-related effects during pre-construction, construction, and operation periods (based on a methodology and monitoring schedule approved by the RWQCB and County); (2) document background and pre-construction groundwater conditions and comparable project-related construction and operation trends, along with related factors such as precipitation levels and groundwater budgets; (3) prepare scaled maps depicting the associated site(s), existing and proposed monitoring well locations, relevant natural (e.g., springs and groundwater-dependent vegetation) and other features (e.g., reservoirs), and pre- post-project groundwater contours, along with a description of cumulative water level changes; (4) restrict project-related groundwater withdrawals to appropriate levels to avoid significant adverse effects to local aquifers/wells and/or other groundwater-dependent uses (e.g., vegetation, springs or other related surface water features), based on thresholds approved by the RWQCB and County; and (5) provide mitigation for affected wells or other uses where applicable, potentially including well modifications (e.g., deepening pumps or wells) and/or financial compensation.

- Groundwater Recharge Capacity: (1) reduce the area of on-site impervious surface if appropriate, through increased use of surfacing materials such as gravel, decomposed granite, or pervious pavement; and (2) use facilities such as retention/percolation basins and unlined drainage facilities to increase local infiltration and groundwater recharge.

MM HYD-3: Conduct site-specific water quality investigations.

Site-specific water quality investigations will be completed for long-term solar facility operations associated with applicable proposed development projects within the individual SEDAs and the OVSA (i.e., those with activities potentially affecting water quality conditions, as determined by the County), as well as the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. All applicable results and recommendations from these investigations will be incorporated into the associated individual final project design documents to address identified potential long-term water quality issues related to conditions such as: anticipated and potential pollutants to be used, stored or generated on-site; the location and nature (e.g., impaired status) of on-site and downstream receiving waters; and project design features to avoid/address potential pollutant discharges. The final project design documents will also encompass applicable standard design practices from sources including NPDES and County standards, as well as the results/recommendations of project-related hazardous materials investigations and regulatory standards (with all related requirements to be included in applicable engineering/design drawings and construction contract specifications). A summary of the types of BMPs typically associated with identified potential water concerns, pursuant to applicable regulatory and industry standards (as noted), is provided below. The BMPs identified/recommended as part of the described site-specific water quality investigations will take priority over the more general types of standard regulatory/industry measures listed below.

- Low Impact Development (LID)/Site Design BMPs: LID/site design BMPs are intended to avoid, minimize and/or control post-development runoff, erosion potential and pollutant generation to the maximum extent practicable (MEP) by mimicking the natural hydrologic regime. The LID process employs design practices and techniques to effectively capture, filter, store, evaporate, detain and infiltrate runoff close to its source through efforts such as: (1) minimizing developed/disturbed areas to the maximum extent feasible; (2) utilizing natural and/or unlined drainage features in on-site storm water systems; (3) disconnecting impervious pervious to slow concentration times, and directing flows from impervious surfaces into landscaped or vegetated areas; and (4) using pervious surfaces in developed areas to the maximum extent feasible.

- Source Control BMPs: Source control BMPs are intended to avoid or minimize the introduction of pollutants into storm drains and natural drainages to the MEP by reducing on-site pollutant generation and off-site pollutant transport through measures such as: (1) installing no dumping" stencils/tiles and/or signs with prohibitive language (per current County guidelines) at applicable locations such as drainages and storm drain inlets to discourage illegal dumping; (2) designing trash storage areas to reduce litter/pollutant discharge through methods such as paving with impervious surfaces, installing screens or walls to prevent trash dispersal, and providing attached lids and/or roofs for trash containers; (3) designing site landscaping (if applicable) to maximize the retention of native vegetation and use of appropriate native, pest-resistant and/or drought-tolerant varieties to reduce irrigation and pesticide application requirements; and (4) providing secondary containment (e.g., enclosed structures, walls or berms) for applicable areas such as trash or hazardous material use/storage.

- Treatment Control/LID BMPs: Treatment control (or structural) BMPs are designed to remove pollutants from runoff to the MEP through means such as filtering, treatment or infiltration. Treatment control and/or LID BMPs are required to address applicable pollutants, and must provide medium or high levels of removal efficiency for these pollutants (per applicable regulatory requirements). Based on the anticipated pollutants of concern, potential LID and treatment control BMPs may include (1) providing water quality treatment and related facilities such as sediment basins, vegetated swales, infiltration basins, filtration devices and velocity dissipators to treat appropriate runoff flows and reduce volumes prior to off-site discharge (per applicable regulatory requirements); and (2) conducting regular inspection, maintenance and as-needed repairs of pertinent facilities and structures.

4.9.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.9.5, all identified solar facility project-related impacts associated with hydrology and water quality would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

4.10 LAND USE AND PLANNING

4.10.1 Existing Conditions

4.10.1.1 Inyo County Land Use Setting

Land use in Inyo County consists of the management of vast areas of undeveloped public lands providing for a variety of multiple uses, such as wilderness. The majority of the County's population is located on the west side of the County, in small communities situated along US 395. Based on the County's General Plan Land Use Element (Inyo County 2001, as amended), land ownership is primarily public and jurisdiction within the County is largely federal, with the state of California and LADWP constituting the next two largest land managers. Land under the jurisdiction of Inyo County and reservation land under jurisdiction of local tribes constitutes the remaining percentages of land ownership in the County (Figure 4.10-1). The County's General Plan land use designations are illustrated in Figure 4.10-2. Each of these is discussed in more detail below.

Federal

Land management and the jurisdiction of lands within the County is conducted largely by the federal government, covering 91.6 percent of the land within the County (Inyo County 2001, as amended). These land management agencies include: the NPS, BLM, USFS, DOD, and the BIA. Tribal reservations/lands within the BIA areas include those belonging to the Bishop Paiute Tribe, Big Pine Paiute Tribe of the Owens Valley, Fort Independence Community of Paiute, Lone Pine Paiute Shoshone Reservation, and Timbisha Shoshone Tribe. Areas included in federal jurisdiction are: Death Valley National Park, Inyo National Forest, and China Lake NAWS. The BLM has jurisdiction of approximately 27 percent of the County, including areas for grazing allotment and ACEC.

State of California

The State of California manages and/or has jurisdiction of public lands that total about 3.5 percent of land within the County (Inyo County 2001, as amended). These lands include the SLC, and the CDFW. The SLC jurisdiction includes nearly all of Owens Lake.

Los Angeles Department of Water and Power

The LADWP-owned land in the County consists of land associated with the Los Angeles Aqueduct and transmission line rights-of-way. LADWP land accounts for 2.7 percent of the land within the County (Inyo County 2001, as amended). LADWP allows much of its land to be open to the public for recreational uses (LADWP 2013).

Inyo County

Land under jurisdiction of Inyo County includes County-owned and private lands. This land accounts for 1.9 percent of total land within the County (Inyo County 2001, as amended).

Reservation Land

Reservation land accounts for 0.3 percent of land within the County (Inyo County 2001, as amended). It includes lands under the jurisdiction of several tribes, including: Bishop Paiute, Big Pine Band of Owens Valley, Fort Independence community of Paiute, Long Pine Paiute-Shoshone, and Timbisha Shoshone (Aspen 2014).

4.10.1.2 Project Area Land Use Setting

Western Solar Energy Group

<u>Laws Solar Energy Development Area</u>

Land Ownership

The approximate size of the Laws SEDA is 11,655 acres (18 square miles). The majority of this SEDA is managed by public agencies. The major land management agencies in the Laws SEDA include the BLM and the City of Los Angeles (LADWP). The BLM management area covers approximately 35 percent of the SEDA, while the LADWP management area covers approximately 64 percent of the SEDA. Other land management in the Laws SEDA includes private landowners (less than one percent).

Existing Land Uses

The Laws SEDA is located at the northern boundary of the County. Existing land uses within the Laws SEDA include the unincorporated community of Laws, some minor agricultural uses along US 6, north of the community of Laws, and undeveloped land. Some of the area included in the Laws SEDA has previously been disturbed by groundwater pumping, the abandonment of agricultural activities, and water management practices.

Adjacent Land Uses

The Laws SEDA is located adjacent to the OVSA (refer to further discussion of the OVSA below). Land uses adjacent to the Laws SEDA and within the OVSA include the City of Bishop, the Bishop Airport, and undeveloped land. Land uses adjacent to the north consist of undeveloped land. The nearest existing land use to the north include a group of approximately 40 single-family residential units, approximately 2 miles north of the SEDA boundary. The unincorporated community of Chalfant Valley is located over 4 miles north of the SEDA. Land to the east of the Laws SEDA consists of undeveloped land, the majority of which is associated with the Inyo National Forest. Mono County is located north of the Laws SEDA. South of the Laws SEDA is land within with the OVSA. Directly adjacent to the southern boundary of the Laws SEDA is a rural property containing several structures. Other lands south of the Laws SEDA consist of undeveloped land and the Owens River.

General Plan Land Use Designations

General Plan land use designations within the Laws SEDA include Residential, Industrial, and Other types of land use designations. Specifically, residential land use designations within the

Laws SEDA include Residential Medium Density (RM) and Residential Estate (RE). Residential Medium Density allows for residential development at a density of 4.6 to 7.5 dwelling units per acre (du/ac). There is no minimum parcel size for land designated RM. Residential Estate allows for 1 du/5 ac, with a 5-acre minimum parcel size. Industrial land use designations with the Laws SEDA include General Industrial (GI) land uses. The GI land use designation allows for non-residential development intensity (a floor-to-area ratio [FAR]) of 0.50. The remaining lands in the Laws SEDA consist of Other land use designations. The Other land use designations within the Laws SEDA include Open Space and Recreation (OSR), Public Service Facilities (PF), Agriculture (A), Natural Resources (NR), and State and Federal Lands (SFL).

<u>Owens Lake Solar Energy Development Area</u>

Land Ownership

The approximate size of the SEDA is 89,247 acres (139 square miles). Land within this SEDA is largely managed by the SLC, covering approximately 66 percent. The BLM manages approximately 17 percent of the land within the SEDA, much of which is associated with a grazing allotment. Private landowners account for approximately 10 percent of land ownership, while the City of Los Angeles (LADWP) manages approximately 6 percent of the land. The CDFW and local government manage the remaining1 percent of land in the SEDA.

Existing Land Uses

Existing land uses within the Owens Lake SEDA consist of the unincorporated community of Keeler, Owens Lake, and undeveloped land.

Adjacent Land Uses

Land uses adjacent to the Owens Lake SEDA consist of undeveloped land to the east and south of the SEDA. The northern most boundary of the Rose Valley SEDA (discussed below) is located approximately 0.2 mile south of the southernmost portion of the Owens Lake SEDA. The community of Olancha is located south of the Owens Lake SEDA, between the Owens Lake SEDA and the Rose Valley SEDA. A private water skiing lake is located south of the Owens Lake SEDA, near Olancha. A few industrial buildings are located west of the Owens Lake SEDA, along US 395. The remainder of land west of the Owens Lake SEDA consists of the community of Cartago and undeveloped land, much of which is associated with Inyo National Forest. The Los Angeles Aqueduct, owned and operated by the LADWP, is also located west of the Owens Lake SEDA.

General Plan Land Use Designations

General Plan land use designations within the Owens Lake SEDA include Residential, Industrial, and Other types of land use designations. Residential land use designations include Residential Medium-High Density (RMH), Residential Low Density (RL), Residential Ranch (RR), and Rural Protection (RP). RMH allows for a residential density of 7.6 to 15 du/ac, while RL allows for a density of 2 to 4.5 du/ac. There is no minimum parcel size for either of these land use designations. RR allows for a density of 1 du/10 acres, while land designated for RP can be developed with 1 du/40 acres. RR and RP have minimum parcel sizes of 10 and 40 acres, respectively. Commercial land uses within the Owens Lake SEDA include Central Business District (CBD) and Retail Commercial (RC). Both of these commercial designations allow for residential development at densities between 7.6 to 24 du/acre. CBD allows development with a FAR of 1, while development within the RC land use would allow a FAR of 0.4. The Owens Lake SEDA includes Light Industrial (LI) land uses, with a FAR of 0.5. Other land use designations within the Owens Lake SEDA include SFL, OSR, PF, and NR.

Rose Valley Solar Energy Development Area

Land Ownership

The Rose Valley SEDA consists of 24,198 acres (38 square miles). The majority of the land within this SEDA is managed by public agencies, but there are some areas of private land, primarily in the north portion of the SEDA and along the eastern boundary. The BLM manages approximately 76 percent of land within the Rose Valley SEDA, while private landowners own approximately 20 percent of land within the SEDA. LADWP land comprises approximately 4 percent of land within the SEDA.

Existing Land Uses

The Rose Valley SEDA consists mostly of undeveloped land, designated as BLM grazing allotment. Some agricultural uses and a hydropower plant are located in the eastern portion of the SEDA. Small parcels of development occur along US 395, most consisting of a few residential lots, a highway rest stop, and/or small isolated industrial buildings. These uses include the communities of Dunmovin and a portion of the community of Haiwee. Dunmovin consists of unused commercial buildings and a 10-parcel subdivision (Inyo County 2001, as amended). Haiwee covers 2,100 acres and is divided into two sections – one that fronts along US 395 (within the SEDA) and one that sits beside Sage Flat Drive in the Sierra foothills (outside of the SEDA). The Los Angeles Aqueduct traverses the Rose Valley SEDA from the northwest portion in a southeasterly direction.

Adjacent Land Uses

The Los Angeles Aqueduct, which traverses the Rose Valley SEDA as discussed above, connects with the North Haiwee Reservoir which is located just outside of the Rose Valley SEDA to the east. The South Haiwee Reservoir is also located to the east of the Rose Valley SEDA just south of the North Haiwee Reservoir. Other land to the east of the SEDA is undeveloped. Undeveloped land associated with a BLM grazing allotment is located south of the Rose Valley SEDA. Land west of the Rose Valley SEDA consists almost entirely of undeveloped land, with a few scattered rural residential uses. The community of Olancha is located near the northern portion of the SEDA, west and north of the Rose Valley SEDA's irregular boundary. As discussed above, the Owens Lake SEDA is also located north of the Rose Valley SEDA with a minimum distance of 0.2 mile between the two SEDAs.

General Plan Land Use Designations

The Rose Valley SEDA contains land designated for Residential, Commercial, Industrial, and Other uses. Residential land use designations within the Rose Valley SEDA include RE, RR, RP, and Residential Rural High Density (RRH). RRH land use designations allow for a development density of 1 du/ac, with a minimum 1 acre parcel size. Commercial land use designations with the Rose Valley SEDA include RC and Resort/Recreational (REC). Industrial land use designations within the SEDA include GI and LI. Other land use designations within the Rose Valley SEDA include SFL, OSR, A, PF, and NR.

<u>Pearsonville Solar Energy Development Area</u>

Land Ownership

The approximate size of this SEDA is 4,469 acres (7 square miles). BLM manages approximately 44 percent of the land within the SEDA, with private ownership comprising another 43 percent of land within the SEDA. The SLC manages approximately 13 percent, with less than 1 percent consisting of Caltrans-managed land.

Existing Land Uses

The Pearsonville SEDA consists almost entirely of undeveloped land. US 395 traverses the SEDA in north-south direction. The community of Pearsonville/Sterling Road is located near the southern border of the SEDA and consists of a gas station and dispersed rural residential parcels.

Adjacent Land Uses

The Pearsonville SEDA is surrounded by undeveloped land to the north, east and west. The Pearsonville SEDA is located at the southern boundary of Inyo County, and land to the south (located in Kern County) consists of undeveloped land, agricultural uses, and some dispersed, rural residential uses.

General Plan Land Use Designations

The Pearsonville SEDA contains Residential, Commercial, Industrial, and Other General Plan land use designations. Residential land use designations in the Pearsonville SEDA include Residential Rural Medium Density (RRM), RRH, RR, RE, and RP. Commercial land use designations within the Pearsonville SEDA include Heavy Commercial/Commercial Service (HC), RC, and REC. Industrial land use designations within the SEDA include GI and LI. Other land use designations within the Pearsonville SEDA include SFL, OSR, PF, and NR.

<u>Owens Valley Study Area</u>

Land Ownership

The approximate size of the OVSA is 355,131 acres (555 square miles). Agencies managing land within the OVSA include the BLM, LADWP, and local government. The BLM manages the largest portion of the OVSA, consisting of approximately 37 percent. The City of Los

Angeles (LADWP) manages approximately 31 percent. Local government manages approximately 26 percent. Private land ownership accounts for slightly less than 3 percent of land within the OVSA. The remaining land in the SEDA is managed by several agencies, including the CDFW, SLC, and the National Park Service.

Existing Land Uses

The OVSA covers a large area, with a variety of existing land uses. US 395 traverses the middle of the OVSA, in a north-south direction. Most of the population centers for the County occur along US 395 in the OVSA, including Lone Pine, Independence, Big Pine, and Bishop. The OVSA contains other, smaller communities/population centers located further off of US 395. These include the communities of Wilkerson and Aberdeen. Some agricultural uses are located in the OVSA, just south of Big Pine, east of US 395, and south of Bishop, west of US 395. Keough Hot Springs, the largest natural hot springs pool in the Eastern Sierra, is located in the OVSA, west of US 395. The Bishop, Independence, and Lone Pine airports are located within the OVSA. The Bishop Airport is located east of the City; the Independence Airport is located just north of the community of Independence; and, the Lone Pine Airport is located just south of the Lone Pine community. The Los Angeles Aqueduct traverses in a north-south direction through the OVSA. A variety of water bodies are located within the OVSA, including the Tinemaha Reservoir, Calvert Lake, Twin Lakes, and Diaz Lake.

Adjacent Land Uses

Land adjacent to the west consists almost entirely of land associated with the Inyo National Forest. This land is rugged and undeveloped, with dispersed campground areas. The unincorporated communities of Rovana, Round Valley, and Mustang Mesa are located adjacent to the west of the OVSA, in the northwestern portion of the County. Some minor agricultural uses and the Pleasant Valley Reservoir are also located in the northwestern portion of the County, west of the OVSA. Mono County is located north of the OVSA. Land within Mono County adjacent to the OVSA is undeveloped, with the nearest land use consisting of the unincorporated community of Chalfant Valley, located over 4 miles north of the OVSA's northern boundary. Land to the east of the OVSA consists of undeveloped land with rugged terrain. This area includes Inyo National Forest Land and BLM land, both of which are undeveloped. The Owens Lake SEDA is located adjacent to the south.

General Plan Land Use Designations

The OVSA contains Residential, Commercial, Industrial, and Other General Plan land use designations. Residential land use designations in the OVSA include Residential High Density (RH), Residential Medium Density (RM), Residential Very Low Density (RVL), RL, RMH, RRM, RRH, RR, RE, and RP. RH allows for residential development at a density of 15.1 to 24 du/ac, RM allows for 4.6 to 7.5 du/ac, and RVL allows for 2 du/ac with a 0.5 acre minimum parcel size. Commercial land use designations within the OVSA HC, RC, and CBD. Industrial land use designations within the SEDA include GI and LI. Other land use designations within the OVSA include Tribal Lands (TL), SFL, OSR, A, PF, and NR.

Southern Solar Energy Group

<u>Trona Solar Energy Development Area</u>

Land Ownership

The approximate size of this SEDA is 4,550 acres (7 square miles). The majority of the land within this SEDA, consisting of slightly less than 60 percent, is managed by the BLM. Approximately 40 percent of land within the SEDA is in private ownership, and less than 1 percent of land within the SEDA is managed by the SLC.

Existing Land Uses

The Trona SEDA is generally bisected by Trona Wildrose Road. Much of the Trona SEDA is undeveloped; however, there are several existing land uses within the SEDA. The Trona Airport is located within the eastern portion of the SEDA. The airport is for public use and consists of a landing strip and approximately 20 related structures (hangars). The airport also contains a helicopter landing pad. Just north of the airstrip is Valley Wells. Valley Wells consists of a few small buildings, and recreational facilities that include a pool and dry golf course. At the intersection of Trona Airport Road and Trona Wildrose Road, is a property with an industrial building. The southwest corner of the Trona SEDA contains a handful of rural properties that contain small buildings.

Adjacent Land Uses

The Trona SEDA is located along the southern boundary of the County, with land adjacent to the south located within San Bernardino County. In San Bernardino County, adjacent land uses include the community of Trona and undeveloped land. Searles Lake is also located south of the Trona SEDA along with the communities of Searles Valley and Argus. The Trona SEDA has an irregular border, with a portion of the border sharing the Inyo/San Bernardino County line and a portion of the border located farther north of the County line. The portion of land south of the Trona SEDA that is located in Inyo County consists of undeveloped land. Land adjacent to the north, east, and west of the Trona SEDA is undeveloped.

General Plan Land Use Designations

The Trona SEDA contains Residential, Commercial, Industrial, and Other General Plan land use designations. Residential land use designations in the Trona SEDA include RE and RP. Commercial land use designations within the Trona SEDA include HC and RC. The Trona SEDA also includes land designated for industrial uses, with the GI land use designation. Other land use designations within the Trona SEDA include SFL, OSR, PF, and NR.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

Land Ownership

The approximate size of this SEDA is 1,551 acres (2 square miles). Approximately 34 percent of the land within this SEDA is managed by the BLM and the other approximately 66 percent of land within the SEDA is privately owned.

Existing Land Uses

Existing land uses within the Chicago Valley SEDA consists of approximately a dozen mobile homes in the southwestern portion of the SEDA, just east of Chicago Valley Road. The remainder of the SEDA is undeveloped.

Adjacent Land Uses

The Chicago Valley SEDA is located in an undeveloped area, with undeveloped land surrounding the SEDA on the north, east, south, and west. SR 178 provides access to the area and is located within 0.1 mile of the western SEDA boundary.

General Plan Land Use Designations

General Plan land use designations within the Chicago Valley SEDA consists of two land use designations – RP (Residential) and SFL (Other).

Charleston View Solar Energy Development Area

Land Ownership

The approximate size of this SEDA is 39,697 acres (62 square miles). About 41 percent of the land within this SEDA is privately owned. The remaining 59 percent is managed by the BLM, with a large portion of BLM land used for grazing allotment.

Existing Land Uses

Existing land uses within the Charleston View SEDA include the community of Charleston View (which consists of a handful of residential dwellings and a community center/library) and the 17.5-acre Mission of St. Therese. The remainder of land within the Charleston View SEDA is undeveloped.

Adjacent Land Uses

Land adjacent to the Charleston View SEDA to the east and north is within the State of Nevada. The town of Pahrump, Nevada is located north of the Charleston View SEDA, while land to the east of the SEDA is mostly undeveloped, except for a few small industrial uses located approximately 2 miles east of the Charleston View SEDA boundary. Land south and west of the Charleston View SEDA is undeveloped.

General Plan Land Use Designations

General Plan land use designations located within the Charleston View SEDA consist of Residential, Commercial, and Other land use types. Residential land use designations with the Charleston View SEDA include RP and RRM. Commercial land use designations within the SEDA consist entirely of the REC land use designation. This designation occurs mostly in the eastern half of the SEDA. The Other land use designations occurring with the Charleston View SEDA are SFL and OSR.

<u>Sandy Valley Solar Energy Development Area</u>

Land Ownership

The Sandy Valley SEDA is located in the southeastern corner of the County and the eastern boundary of the SEDA is the California/Nevada state line. The approximate size of this SEDA is 3,097 acres (5 square miles). Approximately 54 percent is managed by the BLM and approximately 46 percent of the land within this SEDA is privately owned.

Existing Land Uses

Existing land uses in the Sandy Valley SEDA consists of undeveloped land and agricultural uses. Much of the SEDA is undeveloped with agricultural uses occurring in the westernmost portion of the SEDA and within the central portion of the southern half of the SEDA. A handful of structures are located in the SEDA, consisting of a few single-family residential units and ancillary buildings associated with the agricultural uses (which comprise the California portion of the community of Sandy Valley).

Adjacent Land Uses

Peace Park is located adjacent to the SEDA to the east (in the State of Nevada). Other uses to the east of the SEDA include the Nevada portion of the unincorporated town of Sandy Valley, with a 2010 population of 2,051 (US Census Bureau 2010). Unincorporated San Bernardino County is located south of the Sandy Valley SEDA. Land uses to the south are similar to those within the SEDA and consist of undeveloped land and some agricultural uses. Land to the west of the Sandy Valley SEDA is undeveloped. Land uses to the north of the SEDA consist of the town of Sandy Valley and undeveloped land.

General Plan Land Use Designations

The Sandy Valley SEDA contains two General Plan land use designations, both of which are considered Other land use designations (i.e., not residential, industrial, or commercial). Land within the Sandy Valley SEDA is designated A and SFL.

4.10.1.3 Habitat Conservation Plans

There are three applicable proposed HCPs within the County. The DRECP and the West Mojave Plan are proposed and have not been approved or adopted. The DRECP is a multi-county, multi-jurisdictional plan. Inyo County has been invited to be a signatory to the DRECP, although no decision regarding participating in the plan has been made by the County. The West Mojave Plan would only apply to actions on BLM lands within the plan area. The OVLMP HCP (LADWP 2010) is an HCP incorporated into the LADWP's OVLMP for LADWP lands in Owens Valley. The OVLMP HCP applies to actions on LADWP lands within the plan area.

Desert Renewable Energy Conservation Plan

The DRECP is a proposed HCP and Natural Community Conservation Plan. The preparation of the DRECP is a multiagency effort that is currently underway and is intended to provide protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects in the California deserts. The DRECP is focused on the desert regions and adjacent lands of seven California counties – Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. It is being prepared as a collaborative effort between the CEC, CDFW, BLM, and the USFWS. The portions of Inyo County included in the DRECP area include much of the southeastern portion of the County as well as areas along the US 395 corridor, including Owens Lake. All of the SEDAs, except the Laws SEDA, are located within the proposed boundaries of the DRECP. Over half of the OVSA (the southern portion) is also located within the boundaries of the DRECP.

West Mojave Plan

The West Mojave Plan is "a habitat conservation plan and federal land use plan amendment that: (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and nearly 100 other plants and animals and the natural communities of which they are part; and, (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts" (BLM 2005). The 9,359,070-acre planning area includes 3,263,874 acres of BLM-administered public lands; 3,029,230 acres of private lands; and, 102,168 acres of lands administered by the State of California within portions of Inyo, Kern, Los Angeles, and San Bernardino Counties.

The BLM issued a ROD based on the West Mojave Plan EIS/EIR. The ROD for the West Mojave Plan/Amendment to the CDCA Plan was signed in March 2006. Other agencies did not adopt the habitat conservation plan proposed in the West Mojave Plan to cover their jurisdictions, and therefore the adopted plan only applies to public lands. The ROD addressed only BLM's amendment of the CDCA Plan, and it did not include actions proposed by state and local governments for non-federal lands, except when specifically identified (BLM 2006). The HCP has not been completed and would require greater specificity for local governments to obtain incidental take permits under the state and federal endangered species acts (BLM 2006).

In September of 2009, the Court issued a summary judgment remanding the route designations made in the West Mojave Plan, but keeping other parts of the plan, primarily related to the conservation of species, in place. A remedy order based on this judgment was issued in January 2011, and identified the West Mojave travel route network, with few changes, would be in place until the remedy order is satisfied.

To satisfy the remedy order, new route designations must be completed, consistent with the court's order. This is the basis for the supplemental West Mojave Plan EIS and specific travel management plans now under development. A total of eight travel management plans are being prepared to designate specific routes in various portions of the West Mojave Plan area and implement the route network.

The West Mojave Plan applies to BLM lands in the southwestern portion of Inyo County. The Mohave ground squirrel Conservation Area is a BLM-designated DWMA under the West Mojave Plan, a portion of which occurs in southwestern Inyo County. Along with the desert tortoise, Mohave ground squirrel is a target species of conservation concern for the West Mojave Plan. This area was designated to protect Mohave ground squirrel habitat in a core area of its current distribution, but applies only to BLM lands. The plan area encompasses portions of the Owens Lake SEDA and all of the Rose Valley, Pearsonville, and Trona SEDAs.

Owens Valley Land Management Plan Habitat Conservation Plan

The OVLMP HCP (LADWP 2010) was prepared by the LADWP pursuant to the 1997 MOU between LADWP, the County, CDFW, SLC, the Sierra Club, and the Owens Valley Committee. It provides management direction for resources on all LADWP-owned lands in the County, excluding the LORP area. The County board approved the plan in 2010 (LADWP 2012). The OVLMP HCP covers all city of LADWP-owned lands in Inyo and Mono Counties from the Upper Owens River south to Owens Dry Lake (LADWP 2010). It is a habitat-based HCP addressing riverine-riparian areas, and the target species (Owens pupfish, Owens tui chub, least Bell's vireo, yellow-billed cuckoo, southwestern willow flycatcher, and Swainson's hawk) are used to manage the habitat. The OVLMP HCP was prepared as a separate planning process from the OVLMP and will be incorporated into the plan as an amendment. This planning area falls within the Laws and Owens Lake SEDA and the OVSA.

4.10.1.4 Regulatory Framework

The following discussion presents a description of County plans, polices, ordinances, and regulations applicable to the project.

Inyo County General Plan

The General Plan was adopted in 2001. Amendments to the General Plan were approved in 2003, 2004, 2005, 2006, 2009, and 2010. The General Plan provides guidance for private, County and consists of seven elements: Government, Land Use, Economic Development, Housing, Circulation, Conservation/Open Space, and Public Safety. The following polices of the General Plan are relevant to the proposed REGPA:

Land Use Element

The Land Use Element contains goals, policies, and implementation measures designed to encourage and allow appropriate development with the adequate provision of public services and utilities. The following policies of the Land Use Element are applicable to the project:

- Policy LU-1.15: Buffers. As part of new development review, the County shall require that residential development/districts are protected from non-residential uses by use of buffers or other devices. Landscaping, walls, building/facility placement, and other similar aesthetically pleasing devices are acceptable for this purpose. This does not include residential in mixed-use designations.

Circulation Element

- Policy AVI-1.2: Land Use Compatibility. Promote land use compatibility of each airport with the surrounding environment.

Government Element

- Policy Gov-10.1: Development. Development of energy resources on both public and private lands be encouraged with the policies of the County to develop these energy resources within the bounds of economic reason and sound environmental health. Therefore, the Board supports the following policies.

  a. The sound development of any and all energy resources, including, but not limited to geothermal, wind, biomass, and solar.
  b. The use of peer-reviewed science in the assessment of impacts related to energy resource development.
  c. The development of adequate utility corridors necessary for the transmission of newly generated energy.
  d. Maintain energy opportunities on state and federal lands maintaining and expanding access.
  e. Treat renewable energy sources as natural resources, subject to County planning and environmental jurisdiction. Consider, account for, and mitigate ecological, cultural, economic, and social impacts, as well as benefits, from development of renewable energy resources. Consider developing environmental and zoning permitting processes to ensure efficient permitting of renewable energy projects while mitigating negative impacts to county services and citizens, with a goal to ensuring that citizens of the County benefit from renewable energy development in the County.

Inyo County Code Title 18: Zoning Ordinance

Title 18 of the ICC contains the County's Zoning Ordinance, which provides the regulations and laws that define how property in specific geographic zones can be used. The SEDAs contain areas with a variety of zoning, including Open Space (OS), Rural Residential (RR), One Family Residences (R-1), Multiple Residential Zone (R-3), Single Residence or Mobile home Combined (RMH), Central Business (CB), General Commercial and Retail (C-1), Highway Services and Tourist Commercial (C-2), Heavy Commercial (C-4), Commercial Recreation (C-5), General Industrial and Extractive (M-1), Light Industrial (M-2), , and Public (P). Table 4.10-1 describes the purpose or intent of each of the zoning districts within the SEDAs and the OVSA.

Table 4.10-1
ZONING DISTRICTS WITHIN THE SEDAS AND THE OWENS VALLEY STUDY AREA

Zoning Designation	Intent
Open Space (OS)	Provide a zone classification for those areas designated as open space by the County General Plan so as to encourage the protection of mountainous, hilly upland, valley, agricultural, potential agricultural, fragile desert areas, and other mandated lands from fire, erosion, soil destruction, pollution and other detrimental effects of intensive land use activities. Establish standards for land uses that will protect and preserve the environmental resources, scenic, natural features, and open space character of the County, while also providing for agricultural development and protection of existing agricultural areas from urban development or residential subdivision. Preserve agricultural areas open space around the more intensive urban areas of the County, while providing for compatible multiple use of nonagricultural lands which are principally held by federal and other public agencies.
Rural Residential (RR)	Provide suitable areas and appropriate environments for low density, single-family rural residential and estate type uses where certain agricultural activities can be successfully maintained in conjunction with residential uses on relatively large parcels. The RR (rural residential) zone is intended to be applied to the areas outside the urban communities of Inyo County which are without fully developed services and where individual residences are expected to be largely self-sustaining, particularly for water and sewage disposal.
One Family Residences (R-1)	Protect established neighborhoods of single-family dwellings, and to provide space in suitable locations for additional development of this kind, with appropriate community facilities.
Multiple Residential Zone (R-3)	Provide a zone classification for those areas designated for multiple residential development beyond that permitted by the R-2 zoning district. It is intended to provide locations for multi-housing developments such as apartments, townhouses, condominiums and mobile home parks.
Single Residence or Mobile home Combined (RMH)	Protect established neighborhoods of single-family dwellings (dwelling includes in its definition a mobile home), and to provide space in suitable locations for additional development of this kind with appropriate community facilities.
Central Business (CB)	Designate areas for a variety of small commercial retail, service, and office uses, mixed-use, as well as multi-family.
General Commercial and Retail (C-1)	Provide suitable lands and locations for various retail, service and commercial activities.
Highway Services and Tourist Commercial (C-2)	Provide space for highway and tourist related enterprises adjacent to major routes of travel, so regulated as to prevent the impairment of safe and efficient movement of traffic and to encourage attractive development compatible with adjacent residential land uses.
Heavy Commercial (C-4)	Provide a zone for commercial activities which usually are conducted without direct contact with the public. They can be nuisance-producing if located adjacent to residential areas and often require large amounts of space.

Table 4.10-1 (cont.) ZONING DISTRICTS WITHIN THE SEDAS AND THE OWENS VALLEY STUDY AREA	
Zoning Designation	**Intent**
Commercial Recreation (C-5)	Provide a zone for commercially operated recreational activities including resorts, lodges, motels, restaurants, general stores, campgrounds, mobile home parks, service stations, dude ranches, and other uses oriented primarily to the traveler and tourist.
General Industrial and Extractive (M-1)	Provide space in suitable locations in Inyo County for all types of manufacturing, warehousing, processing, mining, ore reduction and mineral development activities, provided such activity does not cause pollution of any human or natural resource.
Light Industrial (M-2)	Provide a zone for suitable and appropriate areas for light, less intense, small scale manufacturing activities which normally take place within structures. Limited amount of outdoor storage or activities are acceptable, provided they are clearly accessory and incidental to the main use.
Public (P)	Provide zoning regulation for such land and buildings as may be used for public purposes, but which may in the future be released for private purposes or which may be developed for more intensive public purposes.

Inyo County Code Title 21: Renewable Energy Development Ordinance

ICC Title 21, adopted August 17, 2010, is intended to support, encourage, and regulate the development of the County's solar and wind resources and transmission of clean, renewable electric energy. Development of any renewable energy facility requires a renewable energy permit from the County Planning Commission. Any exemptions from this provision would require a renewable energy impact determination from the County Planning Commission. ICC Title 21 sets forth the minimum requirements necessary for a permit such as mitigation measures, development standards, and financial assurances.

The following are among the key provisions in the ordinance related to the development of renewable energy projects.

- Section 21.16.010: Renewable Energy Permit – Any person who proposes to construct a facility within the County or modify an existing facility within the County shall, prior to the commencement of construction or modification, first apply for and obtain from the County Planning Commission a renewable energy permit, unless specifically exempted from such requirements by this Title or by state or federal law.

- Section 21.16.020: Renewable Energy Impact Determination – Any person who proposes to construct a facility within the County or modify an existing facility within the County who is not subject to a renewable energy permit issued by the County for the facility, shall, prior to the commencement of construction or modification, first apply for and obtain from the County Planning Commission a renewable energy impact determination that identifies environmental and other impacts expected to result from such project and mitigation for those impacts. As part of its analysis, the County Planning Commission shall determine whether the project is consistent with the County General Plan. The goal of the renewable energy impact determination is to ensure that mitigation measures that would otherwise be addressed in a renewable energy permit and/or renewable energy development agreement that are identified pursuant to the renewable energy impact determination are, to the extent possible, incorporated into any approval of the facility granted by a state or federal agency.

- Section 21.16.030: Exemptions – Any person applying for a renewable energy permit need not apply for a renewable energy impact determination. Any person who has a renewable energy development agreement with the County for the construction or modification of a facility need not apply for a renewable energy impact determination or a renewable energy permit for the facility that is the subject of the renewable energy development agreement.

Inyo County Airport Land Use Commission Policy Plan and Airport Comprehensive Land Use Plan

The Inyo County Airport Land Use Commission adopted a *Policy Plan and Airport Comprehensive Land Use Plan (CLUP)* in 1991, pursuant to applicable state requirements. There has been no requirement to update the CLUP, although the County "…has prioritized the completion of Master Plans at each of the general aviation airports it maintains. Once the Master Plans are completed or there is a requirement to update the CLUP the County will pursue an update to the CLUP" (Inyo County 2014).

Owens Valley Land Management Plan

The OVLMP is a resource management guide for City of Los Angeles-owned non-urban lands in Inyo County, excluding the LORP area. The Final OVLMP was released in April 2010. The OVLMP provides a framework for implementing management prescriptions through time, monitoring resources, and adaptively managing changed land and water conditions. A primary aspect of the OVLMP is grazing management aimed at implementing sustainable practices, balancing agricultural needs and other resource needs based on the carrying capacity of the land. Grazing management has been implemented through a series of LADWP-administered grazing leases to private parties. The OVLMP planning area falls within the Laws and Owens Lake SEDA, and the OVSA. Applicable goals and objectives from the OVLMP include the following:

- Objective 8: Establish commercial use protocols. LADWP emphasizes multiple resource uses on their lands such as livestock grazing, recreation, gravel extraction, business sites, parks, home leases, municipal dumps, and other agricultural activities such as bee-keeping, hobby ranching, orchards, and field crops. Commercial use management protocols for approving such activities include duration, extent, limitation, and review. Managing commercial uses ensures protection of habitat and avoids conflicts with other uses and management goals.

Bishop Resource Management Plan

BLM-administered public lands are managed in accordance with approved Resource Management Plans (RMP). The Bishop RMP (1993) provides planning direction for the future use of 750,000 acres of public lands in the eastern Sierra region of Inyo and Mono counties. Key issues addressed in the Bishop RMP include recreation, wildlife habitat, minerals, and land tenure adjustment. Applicable policies from the Bishop RMP include the following:

- General Policy 4. Public lands will be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

- General Policy 7. The [BLM] will weigh long-term benefits to the public against short-term benefits management of public lands will consider:
    - Safety of the public and [BLM] personnel;
    - Relative cost-effectiveness of managing individual tracts;
    - Fiscal ability of the [BLM] to effectively manage lands and interests (including easements) over the long term; and
    - Alternative management schemes and creative partnerships with other agencies and organizations.

4.10.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on geology and soils if it would result in any of the following:

- Physically divide an established community;

- Conflict with any applicable land-use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or

- Conflict with any applicable HCP or Natural Community Conservation Plan.

Although not identified in the State CEQA Guidelines, the impact analysis also contains a discussion of land use compatibility impacts.

4.10.3 Impact Analysis

The REGPA works to harmonize land use and planning objectives in the County to accommodate appropriate solar energy resource development, and to be beneficial. Individual projects may have the potential to result in significant land use and/or planning effects, as discussed below.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest environmental change due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to land use and planning against the program-level analysis contained in this PEIR.

4.10.3.1 Physically Divide an Established Community

The SEDAs occur in portions of the County that are generally rural in nature and primarily consist of undeveloped areas. While each SEDA contains some development, many of the communities scattered throughout the SEDAs consist of dispersed structures, residential units, occupied properties, and/or other development. Each SEDA contains a cap of total allowable developable area. Table 4.10-2 identifies the total land area of each SEDA, as well as the total allowable developable area.

Table 4.10-2
TOTAL AREA AND TOTAL ALLOWABLE DEVELOPABLE AREA BY LOCATION

Solar Energy Development Area	Total Land Area (acres)	Total Allowable Developable Area (acres)	Percent of Total Area Allowed for Solar Energy Development
Western Solar Energy Group			
Laws	11,655	120	1.0
Owens Lake	89,247	1,500	1.6
Rose Valley	24,198	600	2.4
Pearsonville	4,469	600	13.4
Owens Valley Study Area	355,131	1,500	0.4
Southern Solar Energy Group			
Trona	4,550	600	13.2
Eastern Solar Energy Group			
Charleston View	39,697	2,400	6.0
Sandy Valley	3,097	600	19.4
Chicago Valley	1,551	300	19.3

The maximum percentage of any SEDA that would be developed with solar energy projects is 19.4 percent of the total SEDA area, which could occur in the Sandy Valley SEDA. Much of the

Sandy Valley SEDA is undeveloped, with existing uses consisting of agricultural uses and a few single-family residential units and ancillary buildings associated with the agricultural uses. The Chicago Valley SEDA, which has a total allowable solar energy development area of 19.3 percent of the total SEDA land area, contains approximately a dozen or so mobile homes a community center/library, and the 17.5-acre Mission of St. Therese. No other substantial development is present in this SEDA. The Pearsonville and Trona SEDAs have a total allowable solar development area of 13.4 and 13.2 percent, respectively. Both of these SEDAs contain a small community and some dispersed development, but also have vast areas of undeveloped land. The Charleston View SEDA would have 6 percent of its total land area available for future solar development, and the remaining SEDAs (i.e., Laws, Owens Lake, and Rose Valley) would have 1, 1.6, and 2.4 percent, respectively, of the total SEDA land area available for solar energy development.

Given the vast stretches of undeveloped land in each SEDA, development of the maximum allowed solar energy would likely be able to occur without physically dividing an established community. The proposed REGPA would not result in the physical division of an established community. Future solar energy projects within the SEDAs would be subject to the applicable land use requirements of the County and additional environmental review. As part of this review, each project would be analyzed to determine impacts regarding the physical division of a community. Future development of solar energy projects within the SEDAs would require appropriate siting and is subject to further review and approval from the County. As such, the REGPA would not result in significant impacts associated with the physical division of communities. Impacts would be less than significant.

4.10.3.2 Conflict with Applicable Land Use Plans

Inyo County General Plan

The REGPA includes new General Plan policies for responsible renewable energy development. The policies may set the limits of where, when, how, and even if, renewable energy generation facilities will be built. The policies include provisions for actual sites identified in the County that may be appropriate for renewable energy development, what specific factors must be met before development can commence, under what conditions a facility can be built, and requirements for the termination, decommissioning, and reclamation of a facility.

As discussed in Section 3.0, the REGPA proposes changes to the Land Use, Economic Development, Conservation/Open Space, and Public Safety Elements of the General Plan. Proposed Land Use Policy LU-1.17 allows for the construction and operation of appurtenant transmission and storage facilities and related infrastructure within any Land Use Designation. Under the proposed project, the County has identified areas that may be the most appropriate for siting future solar energy development projects (i.e., the SEDAs). The SEDAs would be incorporated into the General Plan with policies and implementation measures guiding development within them.

By identifying SEDAs and incorporating them into the General Plan, the County is effectively limiting and constraining feasible solar energy development within these boundaries. Future solar development projects within the SEDAs would still be subject to further land use review, CEQA documentation, implementation of applicable mitigation measures identified in REGPA, and would be required to comply with applicable General Plan policies. Compliance with existing General Plan policies, as well as future land use review and CEQA analysis requirements would ensure that the proposed REGPA would reduce or avoid impacts associated with General Plan consistency. Impacts regarding General Plan consistency associated with the proposed REGPA would be less than significant.

Inyo County Zoning Ordinance

As discussed above, land contained within the SEDAs and OVSA are zoned for a variety of uses. The proposed REGPA includes new land use policies (Policy LU-1.17 and LU-1.18), which indicate that Utility scale and Distributed Generation Solar Energy Facilities and Community scale Renewable Energy Solar Facilities shall be considered in any zoning district under ICC Title 18. Thus, the proposed REGPA and future solar development projects would be consistent with the County Zoning Ordinance. No inconsistency or impact would occur.

Inyo County Code Title 21: Renewable Energy Ordinance

The County has enacted ordinances and polices supporting, encouraging, and regulating the development of renewable energy resources, including ICC Title 21, which contains standards for development and a framework for permitting such development. The process of establishing SEDAs would direct future developers to areas the County has identified as most appropriate for development and away from areas that are not. The proposed REGPA would be consistent with ICC Title 21, and would serve to further support, encourage, and regulate the development of renewable energy sources. No inconsistency or impact would occur.

Inyo County Airport Land Use Commission Policy Plan and Airport Comprehensive Land Use Plan (CLUP)

As discussed in Section 4.8, there are seven general aviation/public airports, six private landing strips, and at least one active backcountry airstrip within the County. The Bishop, Independence, and Lone Pine airports are located within the OVSA, and the Trona Airport is located within the Trona SEDA. The remaining airports and landing strips are located outside of the SEDAs, but in some cases, in close proximity to the SEDAs. The Bishop Airport is located approximately 1 mile from the Laws SEDA boundary, the Hidden Hills Airport (a private airstrip) is located approximately 1.1 mile from the Charleston View SEDA, and the Sky Ranch Airport (a private airstrip) is located approximately 0.9 mile from the Sandy Valley SEDA boundary.

Future solar development projects within the SEDAs would be required to complete an analysis of airport land use compatibility as part of the land use planning and entitlement process and CEQA documentation. Future projects would be required to comply with applicable regulations, standards, and General Plan policies. Compliance with existing regulatory programs, standards, and General Plan policies, as well as future land use review and CEQA analysis requirements would ensure that the proposed REGPA would reduce or avoid impacts associated with the County's CLUP. Impacts associated with the proposed REGPA would be less than significant.

Owens Valley Land Management Plan

The OVLMP plan area includes land in a portion of the Laws and Owens Lake SEDAs and the OVSA. Future solar development projects on LAWDP land within the OVLMP plan area would be required to comply with LAWDP requirements for development. As the OVLMP contains an objective for establishing commercial use protocols within the OVLMP area, and LADWP emphasizes multiple resource uses on their lands, future solar development projects would not be inconsistent with the OVLMP (subject to appropriate review and approvals by LADWP). As stated in the OVLMP, "[m]anaging commercial uses ensures protection of habitat and avoids conflicts with other uses and management goals." The County has limited jurisdiction over the approval and environmental impact analysis required for projects sited on LADWP land; however, no inconsistency or impact is expected to occur.

Bishop Resource Management Plan

Future solar development projects that would occur within BLM lands would be subject to the requirements, review, and approval of the BLM. Each project would be required to be consistent with the Bishop RMP. The County has limited jurisdiction over the approval and environmental impact analysis required for projects sited on BLM-managed land; however, no inconsistency or impact is expected to occur.

4.10.3.3 Conflict with Habitat Conservation Plans

Although the SEDAs and OVSA are within the boundaries of proposed HCPs, two of the HCPs (DRECP and West Mojave Plan) are not currently approved nor being implemented. Assuming approval and implementation of the DRECP, and if the County becomes a signatory to the HCP, future projects within the boundaries of the HCP would be required to comply with the requirements of the HCP. The third HCP (OVLMP) applies to actions on LADWP lands. Future solar development projects associated with the REGPA would be required to analyze biological impacts of each project (refer to Section 4.4).

4.10.3.4 Land Use Compatibility

Future solar energy projects could result in potential land use compatibility issues, depending on the location of such projects and the presence of nearby uses that could perceive nuisances or incompatibilities. For example, noise or glare from a future solar energy project could be inconsistent with adjacent sensitive uses, such as residences or school uses. Based on existing land uses within the SEDAs, it is expected that future solar energy projects within the SEDAs would be relatively isolated from other uses; however, most of the SEDAs do contain some amount of residential uses or other uses that could be sensitive to activities associated with a solar development project, if it was located in close proximity. Future solar development projects would be subject to the applicable land use requirements of the County and additional environmental review. As part of this review, each project would be analyzed to determine impacts regarding the land use compatibility with adjacent uses. Future development of solar energy projects within the SEDAs would require appropriate siting and is subject to further review and approval from the County. As such, the REGPA would not result in significant impacts associated with the land use compatibility. Impacts associated with the proposed REGPA would be less than significant.

4.10.4 Level of Significance before Mitigation

Based on the analyses in Section 4.10.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA would result in less than significant impacts related to land use and planning, and mitigation is unwarranted. Small scale projects are typically considered to result in no impacts under CEQA.

4.10.5 Mitigation Measures

No mitigation measures are required.

4.10.6 Significant Unavoidable Adverse Impacts

No significant, unavoidable adverse land use and planning impacts would result from implementation of the proposed REGPA.

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4.11 MINERAL RESOURCES

4.11.1 Existing Conditions

4.11.1.1 Inyo County Mineral Resource Potential

As described in Section 4.6, the County is located within the Basin and Range Geomorphic Province, with this region historically producing substantial amounts of mineral resources such as base and precious metals (e.g., gold, silver and copper). The County includes extensive occurrences of known and potential mineral resources, along with associated past and current mineral production (Figure 4.11-1). The reader is also directed to Figure 4.10-1 at the end of Section 4.10 to view land ownership within the County and each SEDA and the OVSA.

The occurrence of mineral resources was an important factor in much of the early settlement within the County, and mining operations remain a substantial, albeit declining, local industry. Currently, aggregate resources (e.g., sand, gravel, clay and stone) represent the predominant mining activity in the County, although development of other mineral resources such as base and precious metals, borates, volcanic materials (e.g., pumice, perlite and cinders) and geothermal resources are occurring in various locations. A number of studies on mineral resource occurrences and potential have been conducted for areas within the County, including efforts by the USGS, BLM, CGS, and South Coast Geological Society. These sources are outlined below, with applicable individual mineral resource occurrence/potential descriptions provided below under the discussion of Project Area Mineral Resource Potential.

US Geological Survey Investigations

Numerous investigations regarding mineral resources in the County have been conducted by the USGS (2014). Specifically, these include extensive evaluation of current and historic mining for: (1) base and precious metals in areas such as the Death Valley region, the White and Inyo Mountains, the Argus Range, and Darwin; (2) borates and soda ash from the Death Valley area and Owens Lake; (3) tungsten minerals along the eastern Sierra Nevada, including deposits near Bishop (Tungsten Hills); (4) volcanic materials from sources including the Coso volcanic field; and (5) other minerals, such as limestone and talc deposits in the White and Inyo Mountains.

US Bureau of Land Management Investigations

The BLM CDCA Plan (1980) includes an assessment of “economic mineral resources” on federal lands in much of Inyo County. This analysis identified similar locations of known/potential mineral occurrences as noted above under USGS Investigations, as well as the following areas of mineral resource potential: (1) energy minerals (e.g., uranium and thorium) in locations including Saline Valley, the northern Coso Range and southern White and Inyo Mountains (including areas near Owens Lake, Olancha and Rose Valley), and Death Valley; (2) base and precious metals east of Tecopa in the southern Nopah Range; (3) volcanic materials in the White and Inyo Mountains; (4) non-metallic minerals (e.g., zeolites) in the Death Valley and Tecopa areas; and, (5) geothermal resources in Saline Valley, the Coso volcanic field, northern Searles Valley and the Tecopa area.

California Geological Survey Investigations

The CGS has conducted numerous analyses of mineral resource occurrences and potential throughout Inyo County, including most of the areas noted above for USGS and BLM studies (CGS 1991), as well as Mineral Resource Zone (MRZ) investigations for the Eureka/Saline Valley area (1993a) and the southern Death Valley region (1993b). The establishment of MRZs is based on requirements outlined in the State Surface Mining and Reclamation Act (SMARA), with both of the referenced assessments identifying MRZs with known and potential mineral resource potential (and additional information on MRZs provided below under the discussion of Regulatory Framework). While MRZ designations identifying known/potential mineral resources within the County are limited to the two noted areas, other portions of the County could potentially encompass such resources and qualify for associated MRZ designation. This conclusion is based on the widespread occurrence of mineral resources (such as aggregate) and the presence of geologic environments suitable for mineral occurrences within the County (refer to Section 4.6 and the project area descriptions below), as well as the fact that known MRZ investigations in the County have not been conducted outside of the two identified areas (CGS 2013).

South Coast Geological Society Investigations

The South Coast Geological Society has published numerous studies regarding mineral resource potential and occurrence in the desert areas of California. Specifically, these include many of the locations described above for other investigations, as well as metamorphic minerals such as asbestos and wollanstonite in the northern Death Valley area (South Coast Geological Society 1980).

4.11.1.2 Project Area Mineral Resource Potential

Western Solar Energy Group

<u>Laws Solar Energy Development Area</u>

The Laws SEDA exhibits potential for the occurrence of recoverable mineral resources (Figure 4.11-1). From the above descriptions and the assessment of on-site and regional geology in Section 4.6, this potential is assumed to be generally moderate for aggregate minerals (such as sand and gravel), low to moderate for geothermal resources, and low for other mineral types. Specifically, the Laws SEDA is located within an area encompassing thick deposits of Quaternary alluvium, alluvial fan and lake deposits, with older Quaternary sediments, Quaternary volcanics, and Paleozoic metasedimentary rocks in adjacent areas (and presumably underlying the site at depth). Specifically, these include areas in the White and Inyo Mountains to the east, and Sierra Nevada to the west identified as exhibiting known or inferred occurrences of minerals such as base and precious metals, talc, and tungsten (USGS 2014; CGS 1993a).

As a result of the noted conditions, portions of the on-site Quaternary alluvial deposits may potentially be suitable as commercial aggregate, and potential exists for geothermal resources associated with nearby Quaternary volcanic deposits. Due to the extensive alluvial fill, a low potential is assigned for other mineral types (such as base and precious metals), due to the related costs of recovery (e.g., from removal of overburden). With respect to aggregate minerals, it should also be noted that the described types of alluvial and lake deposits are widespread in pertinent areas of the County (i.e., larger valleys), and the determination of whether such materials are suitable as commercial aggregate is typically driven by location and economic factors (e.g., distance to markets and related transportation costs). As a result, while alluvial materials suitable for use as construction aggregate may be present in a particular location, their commercial value and viability will normally be based on site-specific marketability conditions. Additionally, portions of the Laws SEDA are under the jurisdiction of the BLM and local government bodies (Figure 4.10-1). As a result, mineral-related encumbrances (such as federal mining claims and federal/local mineral leases) may exist therein, with such mineral entries incorporating associated legal rights for access, surface use and resource recovery, per related federal and local guidelines (with additional information provided below under the discussion of Regulatory Framework).

Owens Lake Solar Energy Development Area

The Owens Lake SEDA exhibits a generally high potential for the occurrence of recoverable evaporate mineral resources (such as trona and soda ash), a generally moderate potential for aggregate minerals (sand and gravel), a low to moderate potential for geothermal resources, and a low potential for other mineral types. These conclusions are based on the following considerations: (1) the known occurrences of recoverable evaporate minerals from Owens Lake (USGS 2014) and aggregate minerals near Olancha (Global Pumice, LLC 2014), as well as the presence of relatively extensive alluvial deposits; (2) the occurrence of nearby Quaternary volcanic deposits (as outlined in Section 4.6, and discussed above for the Laws SEDA); and (3) similar geologic conditions and restrictions related to other mineral types, as discussed above for the Laws SEDA. It should also be noted that several areas just east and southeast of Owens Lake (and within the Owens Lake SEDA) are identified as exhibiting potential for uranium minerals by the BLM (1980). Based on the scale of the associated mapping, however, these areas are likely associated with nearby portions of the northern Coso Range and the southern White/Inyo Mountains (i.e., rather than with the alluvial deposits within adjacent portions of the Owens Lake SEDA). Accordingly, the potential for occurrence of recoverable uranium minerals in the alluvial deposits east and southeast of Owens Lake (and within the Owens Lake SEDA) is considered low. The described portions of the SEDA east and southeast of Owens Lake are also under the jurisdiction of the BLM, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

Rose Valley Solar Energy Development Area

The Rose Valley SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel), a low to moderate potential for geothermal resources, and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws and Owens Lake SEDAs. As previously noted, several areas east/southeast of Owens Lake, as well as areas in the vicinity of North and South Haiwee Reservoirs (and within the Rose Valley SEDA), are identified as exhibiting potential for uranium occurrence by the BLM (1980). As described above for the Owen Lake SEDA, however, these areas are likely associated with the nearby Coso Mountains to the east, and the potential for occurrence of recoverable uranium minerals in the on-site alluvial deposits is considered low. In addition, the majority of the Rose Valley SEDA is under the jurisdiction of the BLM or local government bodies, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

<u>Pearsonville Solar Energy Development Area</u>

The Pearsonville SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel), a low to moderate potential for geothermal resources, and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws and Owens Lake SEDAs. In addition, portions of the Pearsonville SEDA are under the jurisdiction of the BLM or Navy (i.e., the China Lake NAWS), with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

<u>Owens Valley Study Area</u>

The OVSA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel), a low to moderate potential for geothermal and volcanic (e.g., cinders) resources, and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws and Owens Lake SEDAs, as well as the presence of Quaternary volcanic exposures in the central portion of the OVSA. In addition, portions of the study area are under the jurisdiction of the BLM and a number of state/local entities, with potential implications related to mineral entries as discussed above for the Laws SEDA.

Southern Solar Energy Group

<u>Trona Solar Energy Development Area</u>

The Trona SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (i.e., sand and gravel), and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws and Owens Lake SEDAs, as well as the lack of nearby recent (Quaternary) volcanic deposits (i.e., in relation to geothermal resource potential). It should be noted, however, that the BLM identifies an area of geothermal resources in northern Searles Valley, including portions of the Trona SEDA (BLM 1980). This area is presumably associated with Quaternary volcanic deposits (and known geothermal deposits) to the west in the Coso Mountains, with the Searles Valley geothermal area rated as “poor” by the BLM and the associated potential for recoverable on-site geothermal resources is considered low. In addition, portions of the Trona SEDA are under the jurisdiction of the BLM or local government bodies, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

A potential off-site transmission corridor has also been identified for the Trona SEDA and would likely extend along SR 178 to an existing 115-kV transmission line located along US 395 near the City of Ridgecrest (in Kern County). This corridor includes generally similar geologic conditions and mineral resource potential as the Trona SEDA, with surface exposures consisting predominantly of Quaternary alluvial/lake deposits, sandy to loamy topsoils, and Mesozoic granitic intrusive rocks. This corridor exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel) and a low potential for other mineral types, for similar reasons as noted above for the Laws, Owens Lake and Trona SEDAs.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The Chicago Valley SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel), and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws, Owens Lake and Trona SEDAs. In addition, portions of the Chicago Valley SEDA are under the jurisdiction of the BLM or local government bodies, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

A potential off-site transmission corridor has also been identified for the Chicago Valley SEDA and extends generally east-northeast from the SEDA for approximately 19 miles to an existing 500-kV transmission line located along SR 160 in the State of Nevada. This corridor includes Precambrian and Paleozoic metasediments, late Quaternary alluvial/lake deposits, alluvial fans, and sandy to loamy topsoils. This corridor exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel) a low to moderate potential for base and precious metals, and a low potential for other mineral types. These conclusions are based on similar reasons as noted above for the Laws, Owens Lake, Trona, and Chicago Valley SEDAs, as well as the potential for mineral resources such as base and precious metals in association with the noted metasedimentary rocks.

Charleston View Solar Energy Development Area

The Charleston View SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel), a low to moderate potential for base and precious metals, and a low potential for other mineral types. These conclusions are based on similar conditions as described above for the Laws, Owens Lake, Trona, and Chicago Valley SEDAs, as well as the following considerations: (1) portions of the Charleston View SEDA expose a mix of Precambrian/Paleozoic metasedimentary rocks that could potentially encompass mineral resources such as base and precious metals as previously described (i.e., the "panhandle" area in the southwestern portion of the SEDA, refer to Sections 4.11.1 and 4.6); (2) while numerous base and precious metal deposits (including known production sites) occur in surrounding areas (including portions of the Nopah Range, northern Pahrump Valley, the Kingston Range and the Tecopa area), the portion of the Charleston View SEDA within Pahrump Valley is identified as having "no known mineral occurrences" for base and precious metals (i.e., MRZ-4, refer to the discussion of Regulatory Framework below; CEC 2012; CGS 1993b); and (3) portions of the Charleston View SEDA within Pahrump Valley are identified as exhibiting "inferred mineral occurrences" (MRZ-3b) for sodium compounds, although these potential resources are also described as exhibiting low mineralization density, no production history, and a low potential for undiscovered resources (CEC 2012; CGS 1993b). In addition, portions of the Charleston View SEDA are under the jurisdiction of the BLM or local government bodies, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

A potential off-site transmission corridor has also been identified for the Charleston View SEDA, and extends generally northeast from the eastern SEDA boundary along Tecopa Road to an existing 500-kV transmission line corridor located along Nevada SR 160 in the State of Nevada (CEC 2012). This corridor includes generally similar geologic conditions and mineral resource potential as the Charleston View SEDA, with surface exposures consisting predominantly of Quaternary alluvial/lake deposits, alluvial fans and sandy to loamy topsoils. This corridor exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (sand and gravel) and a low potential for other mineral types, for similar reasons as noted above for the Charleston View, Laws, Owens Lake and Trona SEDAs.

<u>Sandy Valley Solar Energy Development Area</u>

The Sandy Valley SEDA exhibits a generally moderate potential for the occurrence of recoverable aggregate minerals (i.e., sand and gravel), and a low potential for other mineral types. These conclusions are based on similar considerations as described above for the Laws, Owens Lake and Trona SEDAs. In addition, portions of the Sandy Valley SEDA are under the jurisdiction of the BLM or local government bodies, with similar potential implications related to mineral entries as discussed above for the Laws SEDA.

4.11.1.3 Regulatory Framework

The proposed project may be subject to a number of regulatory requirements associated with federal, state, and local guidelines, as summarized below.

Federal Regulations

Because substantial portions of the County are under federal management (including areas with split-estate surface/mineral resource ownership), associated federal regulations are applicable in pertinent areas. Specifically, such requirements are associated with areas under the jurisdiction of the BLM and USFS, with most areas under military and National Park Service jurisdiction closed to mineral entry and operation (except for certain "grandfathered" or split-estate sites). Federal mining regulations include broad-based legislation such as the General Mining Act of 1872 (as amended, 42nd US Congress, Sess. 2, Ch. 152, 17 Stat.91-96), and the FLPMA of 1976 (as amended, Public Law 94-579). These Acts provide guidance for procuring rights to the following three basic classes of minerals on public lands: (1) locatable minerals, such as gold, silver and other "hard rock" mineral types; (2) leasable minerals, such as oil & gas and geothermal resources; and (3) salable minerals, such as aggregate and volcanic materials.

The noted Acts, as well as related BLM and USFS guidelines and policies, also provide direction on related mineral exploration, production and processing activities. Specifically, these include applicable federal land use and environmental requirements such as CFR Title 43, Subpart 3809 and NEPA. The noted legislative and regulatory criteria also include guidelines for surface rights related to activities such as access, excavation and other land use considerations associated with mineral exploration and development. Under these guidelines, the rights to use associated surface areas to support mineral activities can vary substantially, depending on factors such as the location/type of operation and the date of associated mineral entries. For example, certain older (and "grandfathered") mining claims under the 1872 Mining Act encompass exclusive surface rights for mineral activities, while leases for some mineral types (e.g., oil and gas) may preclude surface entry entirely, and require alternative recovery methods (e.g., directional drilling) in applicable locations such as sensitive habitats or cultural resource areas.

State Regulations

Surface Mining and Reclamation Act

The primary legislation related to mining activities under State jurisdiction is SMARA (PRC Division 2, Chapter 9, Section 2710 et seq.). Specifically, mineral extraction operations under State jurisdiction are required by SMARA to implement a reclamation plan approved by the Lead Agency. Pursuant to ICC Title 17, Chapter 7.70, the County is the SMARA Lead Agency for applicable operations (as outlined below under County Regulations). SMARA and related County requirements include the implementation of approved reclamation plans to define both the proposed mining operations and the activities/uses proposed after completion of mineral extraction. With respect to site reclamation, extraction areas (and related sites used for purposes such as processing) must be returned to a "useful, approved alternative purpose." Associated reclamation efforts typically involve activities such as regrading or contouring, construction of appropriate manufactured slopes (i.e., to ensure stability and public safety), erosion control, and revegetation.

SMARA also requires the State to map and classify regionally significant mineral resources. The primary intent of this effort is to help protect mineral resources in areas subject to urban expansion or other land uses that could preclude mineral extraction. Mineral classification efforts are intended to identify known and potential areas of valuable mineral deposits, and to determine areas for which additional information is required to verify if such resources are present. Specifically, the following MRZ classifications are identified under SMARA:

- MRZ-1 – Areas where available geologic information indicates that little likelihood exists for the occurrence of significant mineral resources.
- MRZ-2a – Areas underlain by mineral deposits where geologic information indicates that significant measured or indicated resources are present.
- MRZ-2b – Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present.
- MRZ-3a – Areas containing known mineral occurrences of undetermined mineral resource significance.
- MRZ-3b – Areas containing inferred mineral occurrences of undetermined mineral resource significance.
- MRZ-4 – Areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.

Mineral Resources and Mineral Hazards Mapping Program

The California Mineral Resources and Mineral Hazards Mapping Program is administered by the CGS and is divided into two projects: the Mineral Resources Project, which provides data on non-fuel mineral resources (and deals mainly with mineral land classification under SMARA as described above), and the Mineral Hazards Project, which provides data on minerals that pose public health issues such as naturally occurring heavy metals, asbestos, mercury and radon.

County Regulations

Reclamation Plan Ordinance (Ord. 947 § 1, 1994)

The County is the Lead Agency for mining and related reclamation activities conducted under SMARA. Such operations typically entail implementing an approved Reclamation Plan under County oversight, as previously noted. Pursuant to ICC Title 7, Chapter 7.70, Section 7.70.020 (Reclamation Plan Requirements), the following requirements are identified for mining activities conducted under SMARA in the County (with related General Plan requirements as outlined below):

A. Any person who proposes to engage in a mining activity shall, prior to the commencement of the operations, obtain approval of a permit to mine, a reclamation plan, and financial assurances. Approval shall be obtained from the planning commission for a conditional use permit to mine and reclamation plan in accordance with the provisions set forth in this chapter, Title 18 of the [ICC], and as further provided in Section 2772 of the [PRC]. Permits to mine on public and Indian lands shall be obtained from the agency or tribal council administering these lands prior to consideration of approval of a reclamation plan and financial assurance by the planning commission.

B. A person who has obtained a vested right to conduct surface mining operations prior to January 1, 1976, shall submit to the county planning department a reclamation plan for operations to be conducted after January 1, 1976.

C. The reclamation plan shall be applicable to a specific piece of property or properties, shall be based upon the character of the surrounding area and such characteristics of the property as type of overburden, soil stability, topography, geology, climate, stream characteristics, and principal mineral commodities, and shall establish site-specific criteria for evaluating compliance with the approved reclamation plan, including topography, revegetation, and sediment and erosion control.

D. Reclamation plans issued pursuant to this chapter shall run with the land affected thereby and shall be binding on all successors, heirs and assigns of the permittee.

E. Applicants having a surface mining operation which involves separate, noncontiguous parcels of land may file one reclamation plan for the entire operation covering each parcel of land, provided that the type of operation is the same on each parcel of land and each parcel of land is identified in the reclamation plan.

Inyo County General Plan

Conservation/Open Space Element

Section 8.4, Mineral and Energy Resources, in the Conservation/Open Space Element of the General Plan (2001, as amended) provides the following goal related to mineral resources: Goal MER-1, "Protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment." Several associated policies and implementation measures are identified, as summarized below.

- Policy MER-1.1: Resource Extraction and the Environment. This policy is intended to support the production of mineral resources where it would not significantly impact sensitive resources as defined by CEQA and the General Plan. Associated implementation measures include efforts to enforce applicable CEQA requirements for all mining projects, preclude mining operations in areas of applicable sensitive receptors (e.g., residences, schools and hospitals), and ensure that applicable mitigation is provided to address truck traffic-related issues such as noise, dust, erosion and degradation of public roads.

- Policy MER-1.2: Minimize Land Conflicts. This policy is intended to provide buffers between new mining operations and existing or likely nearby uses to reduce incompatibility, and to provide mitigation for environmental and aesthetic impacts. Associated implementation measures include similar efforts as described above for Policy MER-1.1.

- Policy MER-1.3: SMARA Compliance. This policy is intended to ensure that all applicable mining operations in the County comply with associated requirements under SMARA, related County standards, and other pertinent regulations. Associated implementation measures include efforts to review mining projects pursuant to applicable SMARA, County, and other requirements.

- Policy MER-1.4: Environmental Contamination. This policy is intended to ensure that mining operations take appropriate precautions to avoid contamination related to hazardous material and/or general operating activities. Associated implementation measures include similar efforts as described above for Policy MER-1.1, as well as requiring submittal of operating plans to outline methods for spill prevention and other methods to reduce environmental impacts.

- Policy MER-1.5: Maintain Accessibility. This policy is intended to ensure that extractive resource areas are protected from incompatible development that could interfere with existing or future operations. Associated implementation measures include efforts to review development proposals to ensure compatibility and discourage incompatible uses.

Economic Development Element

Section 5.2, Economic Development, in the Economic Development Element of the General Plan (2001, as amended) provides the following goal related to mineral resources: Goal ED-4, "Actively encourage the expansion of existing industry of all types (including resource industries, manufacturing and service industries), and actively recruit new businesses that will bring jobs to the County." Associated policies and implementation measures are summarized below.

- Policy ED-4.1: Mining Industry. This policy is intended to support the operation of existing and future mining activities in appropriate areas, pursuant to applicable environmental and safety requirements. Associated implementation measures include efforts to fast track County reviews for associated mining proposals.

4.11.2 Significance Thresholds

- The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on mineral resources if it would result in any of the following: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.

- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.11.3 Impact Analysis

The REGPA is designed to minimize impacts to mineral resources by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact mineral resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the physical environment due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. In some cases, distributed generation and community scale facilities may be roof-mounted or located in already developed or disturbed areas, and would result in significantly less ground disturbance when compared with larger projects and/or projects located on previously undisturbed sites.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to mineral resources against the program-level analysis contained in this PEIR.

Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the mineral resources impact analysis conducted for the project.

4.11.3.1 Western Solar Energy Group

Laws Solar Energy Development Area

The Laws SEDA and adjacent areas exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial onsite alluvial deposits. As previously noted, however, this potential is qualified somewhat by the widespread occurrence of such deposits within the SEDA (and the County as a whole), the small portion of the Laws SEDA potentially subject to solar development (i.e., up to 120 out of 11,655 acres, or roughly one percent of the total SEDA area), and the fact that mining viability for low unit value resources such as aggregate is typically driven by economic factors. Additional mineral resource potential assessments include low to moderate for geothermal resources, due to the presence of nearby Quaternary-age volcanic deposits, and generally low for other types of minerals based on geologic conditions and/or the presence of thick alluvial fill (i.e., due to associated logistical/cost implications for excavating extensive overburden). The discussion in Section 4.11.1 also notes that portions of the Laws SEDA are within the jurisdiction of the BLM or local government bodies, with associated potential for the occurrence of related mineral entries such as mining claims and mineral leases.

Because the described assessments of mineral resource potential for the Laws SEDA are based primarily on general geologic conditions and existing/previous land use data (e.g., no site-specific information on considerations such as MRZs or mineral entries was utilized), these assessments are considered preliminary. Accordingly, the determination of actual "on-the-ground" potentials for recoverable mineral resources would require more detailed analysis, with proposed project development in the Laws SEDA potentially resulting in significant impacts related to the loss of regionally- or locally-important mineral resources, as well as associated potential conflicts with valid mineral entries. Mitigation is identified below in Section 4.11.5 to address these potential impacts, and entails completion of site-specific mineral resource investigations for proposed development to evaluate mineral resource potentials, assess potential conflicts with mineral entries (if applicable), and identify associated standard remedial measures.

Owens Lake Solar Energy Development Area

The Owens Lake SEDA and adjacent areas exhibit variable potential for the occurrence of recoverable mineral resources. Specifically, the potential for evaporate minerals is considered generally high due to the occurrence of known on-site deposits and production, while the potential for aggregate minerals is considered moderate due to local production history and the presence of alluvial materials as outlined in Section 4.11.1 (with the aggregate potential qualified somewhat by economic considerations as noted for the Laws SEDA). Additional mineral resource potential is low or low to moderate as previously described, and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of the Owens Lake SEDA under BLM jurisdiction). Associated potential impacts from proposed development within the Owens Lake SEDA are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

Rose Valley Solar Energy Development Area

The Rose Valley SEDA and adjacent areas exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA). Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of the Rose Valley SEDA under BLM or other jurisdiction, refer to Section 4.11.1). Associated potential impacts from proposed development within the Rose Valley SEDA are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

Pearsonville Solar Energy Development Area

The Pearsonville SEDA and adjacent areas exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA). Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of Pearsonville SEDA under BLM or DOD jurisdiction). Associated potential impacts from proposed development within the Pearsonville SEDA are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

Owens Valley Study Area

The OVSA and adjacent properties exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA), and the potential for volcanic minerals considered low to moderate based on the presence of Quaternary volcanic rocks. Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of the OVSA under BLM or other jurisdiction, refer to Section 4.11.1). Associated potential impacts from proposed development within the OVSA are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

4.11.3.2 Southern Solar Energy Group

Trona Solar Energy Development Area

The Trona SEDA and adjacent areas, as well as the potential off-site transmission corridor, exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA). Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (although the potential for recoverable geothermal resources in the Trona SEDA is considered low as discussed in Section 4.11.1). Associated potential impacts from proposed development within the Trona SEDA and the associated off-site transmission corridor are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

4.11.3.3 Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

The Chicago Valley SEDA and adjacent areas, as well as the potential off-site transmission corridor, exhibit variable potential for the occurrence of recoverable mineral resources. Specifically, the potential for aggregate minerals is considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA), and the potential for base and precious metals is considered low to moderate in the off-site transmission corridor due to the presence of metasedimentary strata. Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of the Chicago Valley SEDA and potential off-site transmission corridor under BLM or other jurisdiction, refer to Section 4.11.1). Associated potential impacts from proposed development within the Chicago Valley SEDA and potential off-site transmission corridor are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

Charleston View Solar Energy Development Area

The Charleston View SEDA and the potential off-site transmission corridor exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA). Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (although the potential for base and precious metals in "panhandle area" of the Charleston View SEDA is considered low to moderate as discussed in Section 4.11.1). Associated potential impacts from proposed development within the Charleston View SEDA and potential off-site transmission corridor are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

Sandy Valley Solar Energy Development Area

The Sandy Valley SEDA and adjacent areas exhibit variable potential for the occurrence of recoverable mineral resources, with the potential for aggregate minerals considered generally moderate due to the occurrence of substantial alluvial deposits as outlined in Section 4.11.1 (and this potential qualified somewhat by economic considerations as noted for the Laws SEDA).

Additional mineral resource potential and mineral entry assessments are similar to those described above for the Laws SEDA (with portions of the Sandy Valley SEDA under BLM or other jurisdiction, refer to Section 4.11.1). Associated potential impacts from proposed development within the Sandy Valley SEDA are potentially significant for similar reasons as noted above for the Laws SEDA, with mitigation identified below in Section 4.11.5 to address these potential impacts.

4.11.4 Level of Significance before Mitigation

Based on the analyses in Section 4.11.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to the loss of regionally or locally important mineral resources, as well as associated potential conflicts with valid mineral entries. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts to mineral resources when compared with utility scale facilities or facilities located on previously undisturbed sites; however, the severity of the impact would ultimately depend on the resources present. Small scale projects are typically considered to result in no impacts under CEQA.

4.11.5 Mitigation Measures

Mineral resources mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to mineral resources. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on mineral resources and would not require a geological investigation or implementation of the mineral resources mitigation measures listed in this section. In such cases, the County shall document that no impacts to mineral resources would occur and no mitigation measures are necessary in lieu of the mineral resources investigation required in Mitigation Measure MIN-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact geological resources and soils, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.11.3 and 4.11.4, implementation of utility scale solar would result in a number of potentially significant impacts related to mineral resources. Accordingly, the following mitigation is provided to address those issues, and would avoid or reduce all identified mineral resource impacts below a level of significance.

MM MIN-1: Conduct site-specific mineral resource investigations.

Site-specific mineral resource investigations will be completed for proposed utility scale development projects within the individual SEDAs, the OVSA, and the potential off-site transmission corridors associated with the Trona, Chicago Valley, and Charleston View SEDAs (if applicable), prior to final project design approval. These investigations will include the following elements: (1) descriptions of regional and on-site geologic environments; (2) identification of site-specific potential for the occurrence of mineral resources; (3) assessment of estimated mineral resource quantities and extents (as applicable); (4) evaluation of associated potential for economic resource recovery, including considerations such as supply and demand, and production, processing and transportation costs; (5) determination of the presence of mineral entries such as mining claims and mineral leases, including descriptions of individual mineral entry types, issuing agencies and status; (6) assessment of potential impacts from project implementation to identified regionally- or locally-important mineral resources, associated exploration/recovery efforts, and valid mineral entries; and (7) development of remedial measures to address identified impacts to mineral resources, operations and entries, as feasible, potentially including efforts such as avoidance, use of proposed project development timing or phasing to accommodate mineral operations, or locating proposed project facilities to accommodate multiple use operations (e.g., through shared use of access or infrastructure). All applicable results and recommendations from the described investigations identifying identified potential mineral resource impacts and remedial measures will be incorporated into the associated individual project design documents.

4.11.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.11.5, all identified project related impacts associated with mineral resources would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

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4.12 NOISE

The following section discusses potential noise and vibration impacts resulting from the implementation of the proposed project. The analysis is based on the review of existing resources, technical data, and applicable laws, regulations, and guidelines. The focus of the noise analysis is on the potential short-term noise impacts associated with construction activities. No long term noise impacts would occur with the proposed project.

4.12.1 Existing Conditions

4.12.1.1 Environmental Setting

Fundamentals of Environmental Noise

Noise is commonly defined as unwanted sound. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Sound pressures in the environment have a wide range of values. The sound pressure level is the logarithm of the ratio of the unknown sound pressure to a reference quantity of the same kind. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with an A-weighting scheme based on frequency that is stated in units of decibels (dBA). Typical A-weighted noise levels are listed in Table 4.12-1.

A given level of noise may be more or less tolerable depending on the sound level, duration of exposure, character of the noise sources, the time of day during which the noise is experienced, and the activity affected by the noise. For example, noise that occurs at night tends to be more disturbing than that which occurs during the day because sleep may be disturbed. Additionally, rest at night is a critical requirement in the recovery from exposure to high noise levels during the day. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects anticipated from these activities. Some indices consider the 24 hour noise environment of a location by using a weighted average to estimate its habitability on a long term basis. Other measures consider portions of the day and evaluate the nearby activities affected by it as well as the noise sources. The most commonly used indices for measuring community noise levels are the equivalent energy level (L_{EQ}), and the day-night average noise level (L_{DN}).

- L_{EQ} (equivalent energy level) is the average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. It is the decibel sound level that contains an equal amount of energy as a fluctuating sound level over a given period of time.

- L_{DN} (day-night average noise level) is the average equivalent A-weighted sound level over a 24 hour period. This measurement applies weights to noise levels during nighttime hours to compensate for the increased disturbance response of people at those times. L_{DN} is the equivalent sound level for a 24 hour period with a +10 dBA weighting applied to all sound occurring between 7:00 p.m. and 7:00 a.m.

Table 4.12-1
TYPICAL A-WEIGHTED NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: Caltrans 2009
dBA = A-weighted decibel

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA every time the distance between the source and listener is doubled (doubling of distance). Sound that originates from a linear, or "line" source such as a heavily traveled traffic corridor, attenuates by approximately 3 dBA per doubling of distance, provided that the surrounding site conditions lack ground effects or obstacles that either scatter or reflect noise. Noise from roadways in environments with major ground effects due to vegetation and loose soils may either absorb or scatter the sound yielding attenuation rates as high as 4.5 dBA for each doubling of distance. Other contributing factors that affect sound reception include meteorological conditions and the presence of manmade obstacles such as buildings and sound barriers.

Noise has a significant effect on the quality of life. An individual's reaction to a particular noise depends on many factors such as the source of the noise, its loudness relative to the background noise level, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community.

Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is perceivable, while 1 to 2 dBA changes generally are not perceived. Although the reaction to noise may vary, it is clear that noise is a significant component of the environment, and excessively noisy conditions can affect an individual's health and well-being. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on a community can be organized into six broad categories: sleep disturbance, permanent hearing loss, human performance and behavior, social interaction of communication, extra-auditory health effects, and general annoyance.

Community noise environments are typically represented by noise levels measured for brief periods throughout the day and night, or during a 24-hour period (i.e., by L_{DN}). The one-hour period is useful for characterizing noise caused by short term events, such as operation of construction equipment or concert noise (i.e., with L_{EQ}). Community noise levels are generally perceived as quiet when the L_{DN} is below 50 dBA, moderate in the 50 to 60 dBA range, and loud above 60 dBA. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA.

Fundamentals of Environmental Vibration

Vibration consists of waves transmitted through solid material. Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be comprised of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating and is measured in Hertz (Hz). The normal frequency range of most ground-borne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Ambient and source vibration are often expressed in terms of the peak particle velocity (PPV) or root mean square (RMS) velocity in inches per second (in/sec) that correlates best with human perception. The Federal Transit Administration estimates that the threshold of perception is approximately 0.0001 in/sec RMS and the level at which continuous vibrations begins to annoy people is approximately 0.001 in/sec RMS (Federal Transportation Administration [FTA] 2006).

Groundborne vibration can be a concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

4.12.1.2 Existing Noise and Vibration Sources

Noise sources can be grouped into two categories: mobile and stationary. In the County, mobile sources include vehicle traffic on highways and roads, aircraft noise from military, commercial, and private aviation. Primary stationary sources within the County include mining, industrial, commercial, and utility land uses.

Transportation corridors, such as federal and state highways, are a major source of ambient noise within the County. Noise generated from vehicles is governed primarily by the volume, type (the mix of automobiles, trucks, and other large vehicles), and speed. The Noise Element contained in the General Plan provides an overview of general noise conditions along major roadways in the County. The predicted noise levels for the year 2020 are listed in Table 4.12-2. As shown, at a distance of 100 feet from the roadway centerline, roadway levels range from 69 to 73 L_{DN} (Inyo County 2001, as amended).

Table 4.12-2
2020 TRAFFIC NOISE LEVELS ALONG INYO COUNTY ROADWAYS

Roadway/Segment	L_{DN} at 100 feet	Distance (feet) to 70 L_{DN} Contour[a]	Distance (feet) to 65 L_{DN} Contour[a]	Distance (feet) to 60 L_{DN} Contour [a]
US 395				
Bishop	73	158	341	736
Big Pine	69	86	185	398
Independence	69	86	185	398
Lone Pine	69	86	185	398
Olancha	69	86	185	398

Source: Inyo County 2001, as amended
L_{DN} = day-night average noise level
[a] Measured from the roadway centerline.

Seven public access airports and six private airstrips are located throughout the County. These airports are not considered a substantial contributor to noise levels within the surrounding communities given their locations and current use levels. However, flyovers from China Lake NAWS and other nearby installations do affect surrounding areas. In addition to aircraft associated with the China Lake NAWS, aircraft associated with other military installations, including Fort Irwin, Nellis Air Force Base, George Air Force Base, March Air Force Reserve Base, and Edwards Air Force Base, use the station's designated airspace or use other designated flight training routes in the County (Inyo County 2001, as amended).

Western Solar Energy Group

<u>Laws Solar Energy Development Area</u>

Existing noise and vibration sources within the Laws SEDA includes the Bishop Airport, located approximately one mile from the Laws SEDA boundary; traffic on US 6; and potentially equipment associated with agriculture production.

Owens Lake Solar Energy Development Area

Existing noise and vibration sources within the Owens Lake SEDA primarily stems from traffic on US 136, SR 190, and SR 395.

Rose Valley Solar Energy Development Area

Existing noise and vibration sources within the Rose Valley SEDA primarily stems from traffic on US 395, with potential noise also attributed to agricultural equipment.

Pearsonville Solar Energy Development Area

Existing noise and vibration sources within the Pearsonville SEDA primarily stems from traffic on US 395, with potential noise also attributed to agricultural uses located south of the Pearsonville SEDA boundary.

Owens Valley Study Area

Existing noise and vibration sources within the OVSA includes the Bishop, Independence, and Lone Pine airports; traffic on major roads and highways, such as US 395, US 6, SR 136 and SR 168, and potentially equipment associated with agriculture production.

Southern Solar Energy Group

Trona Solar Energy Development Area

Existing noise and vibration sources within the Trona SEDA primarily stems from the Trona Airport, located within the eastern portion of the SEDA. The airport is a public use airport and consists of a landing strip and a helicopter landing pad.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

There are no major sources of noise or vibration currently located within the Chicago Valley SEDA; however, SR 178 is located to the west of the Chicago Valley SEDA boundary and could be a source of both noise and vibration.

Charleston View Solar Energy Development Area

There are no major sources of noise or vibration currently located within the Charleston View SEDA; however, the Hidden Hills Airport (a private airstrip) is located approximately 1.1 mile east from the Charleston View SEDA and could be a source of both noise and vibration.

Sandy Valley Solar Energy Development Area

Existing noise and vibration sources within the Sandy Valley SEDA primarily stems from equipment associated with agriculture production; however, the Sky Ranch Airport (a private airstrip) is located approximately 0.9 mile southeast from the Sandy Valley SEDA and could be a source of both noise and vibration.

4.12.1.3 Noise and Vibration Sensitive Land Uses

Noise sensitive land uses include uses where an excessive amount of noise would interfere with normal activities such as residences, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, passive recreational parks, and some biological habitats.

Vibration-sensitive land uses include facilities where vibration would interfere with operations within the building, such as vibration-sensitive research and manufacturing, hospitals with vibration-sensitive equipment, and university research operations. The degree of sensitivity to vibration depends on the specific equipment that would be affected by the vibration. Electron microscopes and high-resolution lithography equipment function within certain scientific and manufacturing tolerances that can be compromised in high vibration environments. Certain fragile older or historic buildings may be vulnerable to damage from excessive vibration. Residential uses are also sensitive to excessive levels of vibration of either a regular or an intermittent nature.

The County has a relatively small population base, with the majority of people living in small communities along US 395. Existing sensitive receptors in each SEDA and the OVSA are discussed below.

Western Solar Energy Group

<u>Laws Solar Energy Development Area</u>

Existing sensitive receptors within the Laws SEDA include some residences within the Laws community, as well as a group of residences along the northern border of the County approximately one mile east of US 6. There are no hospitals or other non-residence sensitive receptors within the Laws SEDA.

<u>Owens Lake Solar Energy Development Area</u>

Existing sensitive receptors within the Owens Lake SEDA include residences within the Keeler community, as well as residences within a quarter mile outside of the Owens Lake SEDA boundary in the community of Cartago. There are no hospitals or other non-residence sensitive receptors within the Owens Lake SEDA.

<u>Rose Valley Solar Energy Development Area</u>

Existing sensitive receptors within the Rose Valley SEDA include scattered residences primarily along US 395. Existing residences are also located within a quarter mile outside of the Rose Valley SEDA boundary. Relative to the boundary, residences are located to the northwest, between the communities of Grant and Olancha, and to the west, in the northern portion of the SEDA near Sage Flats Road and in the southern portion of the SEDA west of Sykes. There are no hospitals or other non-residence sensitive receptors within the Rose Valley SEDA.

Pearsonville Solar Energy Development Area

Existing sensitive receptors within the Pearsonville SEDA include some residences along US 395 in the community of Pearsonville, as well as what appears to be a single residence just south of 9 Mile Canyon Road and east of the SEDA's west boundary. There are no hospitals or other non-residence sensitive receptors within the Pearsonville SEDA.

Owens Valley Study Area

Existing sensitive receptors within the OVSA include residences, schools, hospitals, and recreation areas. The majority of sensitive receptors are located within the City of Bishop and the communities of (north to south) West Bishop, Wilkerson, Big Pine, Independence, Lone Pine, and Alabama Hills. However, existing residences are also scattered throughout the OVSA in less populated areas. Additionally, some existing residences are located within a quarter mile of the OVSA boundary; these include residences within the Laws community and a few residences west of the Alabama Hills community.

Southern Solar Energy Group

Trona Solar Energy Development Area

Existing sensitive receptors within the Trona SEDA include a few residences west of Trona Wildrose Road. Existing residences are also located within a quarter mile outside of the Trona SEDA boundary. These residences are located to the south of the SEDA and west of Trona Road, in the Pioneer Point community of San Bernardino County. There are no hospitals or other non-residence sensitive receptors within the Trona SEDA.

Eastern Solar Energy Group

Chicago Valley Solar Energy Development Area

Existing sensitive receptors within the Chicago Valley SEDA include a few residences east of Chicago Valley Road approximately a half mile north of the southern SEDA boundary. There are no hospitals or other non-residence sensitive receptors within the Chicago Valley SEDA.

Charleston View Solar Energy Development Area

Existing sensitive receptors within the Charleston View SEDA include residences to the north and south of Tecopa Road within the populated area of Calvada Springs. A few residences are also located across the California-Nevada state line and within a quarter mile outside of the SEDA boundary. There are no hospitals or other non-residence sensitive receptors within the Charleston View SEDA.

Sandy Valley Solar Energy Development Area

Existing sensitive receptors within the Sandy Valley SEDA include a few residences associated with local agriculture. Within a quarter mile outside of the SEDA boundary, existing sensitive receptors include some Nevada residences and a Clark County park, named Peace Park, which contains the Sandy Valley Senior Center. There are no other sensitive receptors within the Sandy Valley SEDA.

4.12.1.4 Regulatory Framework

Federal Regulations

Federal Transit Administration

Although Federal Transit Administration standards are intended for federally funded proposed mass transit projects, the impact assessment procedures and criteria to assess operation and construction noise and vibration impacts included in the Federal Transit Administration's Transit Noise and Vibration Impact Assessment (FTA 2006) are routinely used for projects proposed by local jurisdictions.

State Regulations

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the state has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

Local Regulations

Inyo County General Plan

Noise Element

The General Plan Noise Element includes goals and policies that regulate exposure to excessive noise (Inyo County 2001, as amended).

The goal of the Noise Element is to minimize the impact of noise on the community by identifying existing and potential noise sources and providing the policies and standards needed to keep noise from reducing the quality of life in the County. The Noise Element establishes guidelines to evaluate the compatibility of land uses and noise exposure levels, which are shown in Table 4.12-3. The goal for maximum outdoor noise levels is 60 L_{DN} for land uses generally considered to be noise sensitive (residences, transient lodging, schools, churches, and medical facilities). This level is intended to guide the design and location of future development and serve as a target for the reduction of noise in existing development. If the existing noise standards are currently exceeded, a proposed project may not increase noise levels by more than 3 dBA over ambient levels.

Table 4.12-3
INYO COUNTY GENERAL PLAN NOISE ELEMENT
NOISE LEVEL LIMITS BY LAND USE TYPE

Land Use	Normally Acceptable Maximum L_{DN}
Residential	60
Transient Lodging	60
Schools, Libraries, Churches, Hospitals	60
Sports Arenas, Outdoor Spectator Sports	55
Playgrounds, Parks	70
Office Buildings, Business Commercial and Professional	65
Mining, Industrial, Manufacturing, Utilities, Agriculture	70

Source: Inyo County 2001, as amended
L_{DN} = day-night average noise level

Applicable policies from the Noise Element that would pertain to the project include:

- Policy NOI-1.3: Limit Increases in Noise Levels from Stationary Sources. Require that new development not increase the ambient exterior noise level measured at the property line above established County noise standards, unless mitigation measures are included to reduce impacts to below County noise standards.

- Policy NOI-1.5: Implementation of Mitigation Measures. Require that proponents of new projects provide or fund the implementation of noise-reducing mitigation measures to reduce noise to required levels.

- Policy NOI-1.7: Noise Controls During Construction. Contractors will be required to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet.

Inyo County Municipal Code

The Inyo County Municipal Code limits the generation of nuisance noise and establishes quiet hours for County parks and campgrounds at night in Chapter 12, Section 12.16.110.

4.12.2 Significance Thresholds

In order to assist in determining whether a project would have a significant effect on the environment, the State CEQA Guidelines identify criteria for conditions that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions. Specifically, Appendix G of the State CEQA Guidelines (Environmental Checklist Form) lists the following thresholds under which a project may be deemed to have a significant impact on noise if it would result in:

- Result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinances, or applicable standards of other agencies.

- Result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- Result in the exposure of people residing or working in the project area to excessive noise levels if the project is located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

- For a project within the vicinity of a private air strip, result in the exposure of people residing or working in the project area to excessive noise levels.

The County does not have established quantitative significance thresholds to determine construction and operational impacts for noise or vibration. Therefore, to assist in determining significance, the following criteria will be used:

- Solar energy projects would have a significant impact related to construction noise if construction activities would occur within 500 feet of a sensitive receptor.

- Solar energy projects would have a significant impact related to operational noise if the ambient noise level measured at the property line of the affected use exceeds the acceptable levels outlined in Table 4.12-3, which are 60 dBA L_{DN} for noise sensitive land uses (including residences, schools, and medical facilities).

- Solar energy projects would result in a significant construction or operational vibration impact if the vibration effects result in an exceedance of 0.2 PPV (in/sec) where assessing potential damage to non-engineered timber and masonry buildings; a level of 65 vibration decibels (VdB) in buildings where excessive vibration would result in an interference of operations; or a level of 72 VdB for general annoyance assessment (FTA 2006).

4.12.3 Impact Analysis

The REGPA is designed to minimize impacts caused by noise by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact sensitive receptors to noise.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest change to the ambient environment due the potential expanse of such facilities and the associated construction and operation activities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific noise-related impacts against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the noise analysis conducted for the project.

4.12.3.1 Exposure of Persons to or Generation of Noise Levels in Excess of Established Standards

The utility scale solar energy projects have the potential to generate new sources of noise that may affect surrounding land uses. Stationary source generated noise associated with solar developments include equipment noise, washer stations, power generators, maintenance activities, transmission line maintenance noise, and corona noise. Because specific details regarding the placement of individual solar projects is not available at this time, potential operational noise impacts are discussed at a programmatic level and would be similar for each SEDA and the OVSA.

Off-site vehicular noise would also be generated from operations and maintenance personnel commuting to the solar energy development sites (see Section 4.12.3 regarding potential operational traffic-related noise impacts).

Equipment Noise

During operation of solar developments, on-site noise sources could include pad-mounted inverters and transformers, substation transformers, and tracker array motors and dryers/blowers. Typical noise levels associated with on-site equipment are illustrated in Table 4.12-4.

Table 4.12-4
TYPICAL OPERATION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Distance from Equipment (feet)	Noise Level (dBA)
Pad-mounted inverters	6	77
Substation transformers	5	72
Transformers	5	60
Dryers/blowers	50	43
Tracker Array Motors	50	37

Source: San Diego County 2014
dBA = A-weighted decibel

Washer Station Noise

Periodic washing of solar trackers would be required to optimize efficiency. Washing of the trackers generally occurs during evening and nighttime hours, or between sunset and sunrise, when all trackers are aligned in a westerly direction (i.e., overnight storage position). Depending on the size of the solar development, trackers washing could take several consecutive days to complete; however, trackers washing would likely only be required once every 6 to 8 weeks. Additionally, during trackers washing times, project tracker systems would not be operational (i.e., trackers in stored position), and power inverters would have limited operations due to limited or no sunlight. Therefore, it is expected that neither tracker nor inverter noise would occur while the trackers washing operation is in progress; this means the trackers washing may be assessed by itself as an overnight noise source, and that it would not add to project-related noise exposure during the day (i.e., normal operating period). Noise associated with washing activities would vary depending on the type of equipment used. One option would be the IPC Eagle Wash Station, which generates noise levels of 99 dBA at 9 feet (County of San Diego 2014).

Generator Noise

Solar developments would likely require back-up generators to be used in the event of power loss from the electricity distribution grid. Generators would be used very infrequently, only when power is not available from the electricity grid and the tracking systems need to be repositioned in response to an identified pending storm condition. Multiple generators could be provided per site, for redundancy, but only one would be used at any one time. It is estimated that a generator would be used a total of 20 minutes for the repositioning of the tracking systems in this scenario. The noise level from an enclosed diesel powered generator, for example the Generac SD600, would be 79 dBA at 23 feet (County of San Diego 2014). Transformers, inverters, and tracker blowers would not be in operation while the generator is being used; consequently the generator noise may be considered and evaluated without the noise from these components. Conversely, noise from the trackers would occur simultaneously as noise from the generator.

Transmission Line Noise

In order to minimize impacts associated with new facility construction, the 2013 REGPA focused the development areas along the existing LADWP transmission systems and along the conceptual Valley Electric Association system. The SEDAs in the County's western region and the OVSA would only utilize existing transmission facilities in the County, however SEDAs in the southern and eastern region may require new transmission lines. This is most notable for the Charleston SEDA, which would require a transmission line crossing into Nevada.

New transmission lines could consist of buried cable and/or above-ground cable strung between towers. Buried cable would not require routine maintenance once installed, due to protection provided by placing the cable underground; infrequent activity along the buried portion of the line could occur in response to emergency situations. For the above ground portion of the line, maintenance and repair activities would include both routine preventive maintenance and emergency procedures conducted to maintain system integrity, as well as vegetation clearing.

If no vehicle access exists, the maintenance crew and material are flown in by helicopter, which could be a potential periodic noise source to surrounding uses, depending on the flight path and location of nearby noise sensitive receptors. However, noise generated by maintenance activities associated with maintenance of a new transmission line or gen-tie line (including vegetation trimming, equipment maintenance and repair activities, and helicopter inspections and maintenance activities) would be periodic and short-term in nature.

Corona Noise

Solar developments would include electrical equipment and transmission lines which represent a potential source of corona noise. Corona noise is the audible noise created when energy dissipates from electrical conductive equipment. Corona noise does not apply to other on-site transmission equipment that would be installed underground. As energy dissipates from electrical conductive equipment, some of the energy causes local pressure changes that result in audible noise, or in radio or television interference. The audible corona noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, making corona discharge and the associated audible noise more likely. Therefore, audible noise from transmission lines is generally a foul weather (wet conductor) phenomenon or occurs briefly when dew collects on the transmission lines. Corona noise is relative to the capacity of the transmission line. Studies conducted for a 500kV double-circuit transmission line near Serrano Substation in Anaheim Hills, when humidity was greater than 80 percent and temperatures were in the range of 60°F (conditions contributing to high corona noise), resulted in a noise level of 46 dBA directly under the transmission tower (Veneklasen Associates, Inc. 2004). Beyond 100 feet of the transmission line, the corona noise dropped to 42 dBA.

The County receives approximately 6.1 inches of precipitation a year (USA.com 2014). Because the amount of precipitation per year would be minimal, corona events would be rare and intermittent. New gen-tie lines would involve installation of polymer (silicon rubber) insulators on any new transmission line connections. This material is hydrophobic (repels water) and minimizes the accumulation of surface contaminants such as soot and dirt, which in turn reduces the potential for corona noise to be generated at the insulators. With consideration of these standard practices, noise from coronal discharge would not represent a substantial increase in noise levels in the vicinity of the solar development site. Impacts from corona noise would be minimal.

Summary

The REGPA proposes new General Plan policies and implementation measures to encourage and direct the type, siting, and size of future renewable energy development within the County. The project includes the following Noise Implementation Measure as part of the Public Safety Element of the General Plan:

1. Work with developers and other agencies to minimize noise from Renewable Energy Solar Facility development.

Based on the above discussion, development of solar energy projects have the most potential of generating operational noise that would exceed noise levels in the General Plan Noise Element would be from equipment noise, washer stations, power generators, and maintenance activities.

Noise impacts would be dependent on the size, location, and proximity to noise sensitive land uses. However, since details regarding specific projects are unknown at this time, impacts are considered potentially significant.

4.12.3.2 Exposure of Persons to or Generation of Excessive Groundborne Vibration or Groundborne Noise Levels

Construction Impacts

The potential effect of vibration on buildings located in the vicinity varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). In most cases, the primary concern regarding construction vibration relates to damage, but excessive vibration can result in annoyance to nearby residences.

On-site vibration generation could occur from the construction of solar PV panel structure piles, which would be mechanically vibrated into the ground using special equipment. Typical vibration levels associated with construction equipment are provided in Table 4.12-5. The nearest equipment category that would be equivalent to the PV panel structure pile driving would be cassion drilling (LADWP 2013). Heavy equipment (e.g., caisson drilling) generates vibration levels of 0.089 inch per second PPV and a RMS of 87 VdB at a distance of 25 feet (FTA 2006).

Table 4.12-5
TYPICAL VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 feet (inch/second)	RMS at 25 feet (VdB)
Pile driving (impact)	0.644	104
Pile driving (sonic)	0.170	93
Vibratory roller	0.210	94
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86

Source: FTA 2006
PPV = peak particle velocity
RMS = root mean square

Off-site activity, including construction-related delivery trucks and construction worker vehicles, has the potential to expose vibration-sensitive land uses located near the delivery route to excessive vibration. Loaded trucks generate vibration levels of 86 VdB at a distance of 25 feet.

Vibration dissipates rapidly with distance and given the rural nature of the County, vibration generated from the types of construction-related equipment and trucks that would be typically expected for construction of solar project would not be expected to occur within a range that would exceed the FTA building damage threshold level of 0.2 inch per second PPV for non-engineered timber and masonry buildings or the threshold of 65 VdB for vibration-sensitive uses, or 72 VdB for general annoyance.

Should pile driving or other impact-intensive equipment be necessary, further analysis would be required. However, considering the types of equipment expected for solar development projects, impacts associated with groundborne vibration would be considered less than significant.

Operational Impacts

Heavy-duty trucks traveling to solar energy facilities for routine inspection and maintenance activities could generate vibrations. However, such vehicular movements would generate similar vibration levels as existing traffic conditions and would only be periodic. As a result, operation of solar developments would not normally be anticipated to increase the existing vibration levels. Thus, operational vibration impacts are considered less than significant.

4.12.3.3 Permanent Increase in Ambient Noise Levels

Permanent increases in ambient noise levels in surrounding areas would result from noise generated in relation to solar development operations and maintenance. Stationary noise sources would be regulated by the noise limits within the County Noise Element and are discussed in Section 4.12.3.1.

Another potential Project-related source of noise that may affect ambient noise levels would be related to operations and maintenance personnel commuting to conduct periodic maintenance of the solar facilities. The number of operations and maintenance personnel would be dependent on the size of solar development; however, typically, solar developments do not require a substantial number of operations and maintenance personnel and associated trips would be relatively few (it would take a doubling of vehicle trips to increase noise levels along roadways by 3 dBA). Implementation of the proposed project would periodically increase traffic noise; however, because of the relatively low anticipated number of trips, traffic noise levels are not expected to substantially increase. Impacts would therefore be less than significant.

4.12.3.4 Temporary or Periodic Increase in Ambient Noise Levels

Implementation of the proposed project would result in a temporary or periodic increase in ambient noise levels related to construction equipment, activities, and vehicles. Other periodic noise increases associated with maintenance equipment or vehicles are discussed within Sections 4.12.3.1 and Section 4.12.3.3, respectively.

Noise impacts from construction activities occurring within a project site would be dependent on the type, location, and duration of the noise-generating construction activities, and the distance to noise sensitive land uses. As discussed in Section 4.12.1, existing noise sensitive land uses are located throughout the SEDAs and the OVSA; however, the majority of the land within these locations is undeveloped with no noise sensitive receptors nearby.

Construction activities would be limited to 7 a.m. and 7 p.m., Monday through Saturday. Resulting construction noise would be temporary and short term as construction occurs intermittently and varies depending on the nature or phase of construction (e.g., site preparation, grading, development of staging areas and site access roads, and solar tracker array assembly and installation).

Standard Construction Equipment

Construction of solar energy developments could involve a number of construction activities, including clearing and grubbing of existing vegetation; grading necessary for construction of access roads and tracker foundations; trenching for electrical collection system and communication lines; installation of a small concrete footing at each pair of inverters; construction of an overhead "trunk line" for the collection system leading to a substation; and construction of a substation and an operations and maintenance building. During the peak of construction, a typical day would likely include the transportation of trackers (delivered in sections by conventional trailer trucks), movement of heavy equipment, and transportation of materials including delivery of water by trucks.

The Charleston View SEDA could require a new transmission line that would traverse across state lines. Construction of the transmission line could involve clearing and grubbing of the existing vegetation; grading necessary for transmission pole foundations; trenching for any buried portions of the transmission line; and stringing of the transmission cable.

Construction activities would occur during the County's allowable hours of operation. Construction equipment would include standard equipment such as graders, scrapers, backhoes, loaders, cranes, dozers, water trucks, portable generators and air-compressors, and miscellaneous trucks. The maximum noise level ranges for various pieces of construction equipment at a distance of 50 feet are depicted in Table 4.12-6. Construction noise would be temporary and short-term as construction occurs intermittently and varies depending on the nature or phase of construction. Construction equipment would also be spread out over the entire construction site.

Table 4.12-6
TYPICAL CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment Type	Noise Level at 50 feet (dBA L_{EQ})
Air compressor	81
Backhoe	85
Concrete pump	82
Concrete vibrator	76
Crane	88
Dozer	87
Generator	78
Loader	84
Paver	88
Pneumatic tools	85
Water pump	76
Power hand saw	78
Shovel	82
Trucks	88
Rock drill	81

Source: FTA 2006
dBA = A-weighted noise level
L_{EQ} = equivalent energy level

Vibratory Pile Drivers

Trackers would be installed on steel masts which would be installed to a necessary depth using a vibration pile driver. The exact equipment that would be used is not known, however, it is anticipated that the size and type of equipment necessary would generate a maximum noise level of approximately 85 to 90 dB at a distance of 50 feet (LADWP 2013).

Pre-Drilling for Mast Emplacement

In areas with intact bedrock within the necessary depth of the ground surface, vibratory driving methods alone would not be capable of emplacing the mast to the design depth. If necessary, the construction process would include pre-drilling of a pilot hole with slightly smaller diameter than the mast, followed by insertion of the mast using the vibratory driver. Pilot hole drilling and emplacement of the mast with vibratory driver would not typically occur on the same day. Pilot holes would be drilled by one crew using the rock drill, the vibratory driver crew would be directed to an area once the pilot hole drilling within that area was completed (drilling takes about twice the time as the vibratory emplacement, so it is not efficient to have the vibratory rig following along behind the rock drilling). As shown in Table 4.12-6, a rock drill produces 81 dBA at a distance of 50 feet.

Construction Traffic Noise

Heavy-duty trucks used for deliveries, material and/or equipment hauling, and construction worker trips would temporarily result in noise increases along delivery routes. However, noise impacts associated with worker vehicles and delivery trucks would be short-term and would only occur during daytime hours.

Summary

The County does not provide noise limits for construction noise; however Policy NOI-1.7 requires that contractors implement noise reduction measures if construction is located within close proximity to noise sensitive land uses. Therefore, if construction of solar energy projects or the transmission line are located within 500 feet of a residence or noise sensitive land use and do not include noise-reducing measures, impacts would be potentially significant.

4.12.3.5 Exposure of People Residing or Working in the Project Area to Excessive Noise Levels Related to Public Airports or Private Airstrips

Implementation of the proposed project would result in the development of solar energy projects and the associated employment of operations and maintenance personnel. No sensitive receptors or airports/airstrips are proposed as part of the project. As discussed in Section 4.12.1, several public airports exist inside or within two miles of a SEDA and the OVSA. However, because operations and maintenance personnel would infrequently be on site, the proximity to an airport or airstrip would not expose workers to excessive noise levels. Therefore, noise impacts related to airports and airstrips would be less than significant.

4.12.4 Level of Significance before Mitigation

Based on the analyses in Section 4.12.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to: (1) exposure of persons to or generation of noise levels in excess of established standards during project operations; and (2) temporary or periodic increases in ambient noise levels during construction. These impacts require mitigation to ensure impacts are reduced to the maximum extent feasible.

Due to the shorter construction period and less equipment and personnel vehicles associated with operation due to their smaller sizes, distributed generation and community scale facilities would generally be expected to result in less severe impacts to geology and soils when compared with utility scale facilities; however, the severity of the impact would ultimately depend on the sensitive receptors present. Small scale projects are typically considered to result in no impacts under CEQA.

4.12.5 Mitigation Measures

Noise mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse noise impacts. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential noise-related impacts and would not require a noise study or implementation of the noise mitigation measures listed in this section. In such cases, the County shall document that no impacts to geology and soils would occur and no mitigation measures are necessary in lieu of the noise study required in Mitigation Measure NOI-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to result in noise impacts, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.12.3 and 4.12.4, implementation of solar energy projects under the REGPA could result in potentially significant impacts related to noise. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to geology and soils, and may reduce them to below a level of significance in most cases.

MM NOI-1: Prepare technical noise report for solar facilities proposed within 500 feet of noise sensitive land uses.

If a proposed utility scale solar energy project resulting from implementation of the REGPA is within 500 feet of a residence or other noise sensitive land use, prior to issuance of a Major Use Permit, a site-specific noise technical report will be prepared and approved by the County. The technical report will verify compliance with all applicable County laws, regulations, and policies during operation of the solar project, including that noise levels would not exceed the relevant thresholds described in the General Plan Noise Element (60 dBA L_{DN} for noise sensitive land uses such as residences, schools, transient lodging and medical facilities). The site specific noise technical report will include project specifications, applicable noise calculations, project design features, applicable BMPs and related information from the REAT's Best Management Practices and Guidance Manual (REAT 2010), and mitigation measures applicable to the project. The technical noise report will address operational related noise sources, as well as noise from the use of generators during an emergency. The technical report will calculate specific anticipated noise and vibration levels from operations in accordance with County standards and provide specific mitigation when noise levels are expected to exceed County standards.

MM NOI-2: Implement construction noise reduction measures.

If utility scale solar development resulting from implementation of the REGPA is proposed within 500 feet of a residence or other noise sensitive receptor, the following measures, in addition to applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010), shall be implemented to reduce construction noise to the extent feasible:

- Whenever feasible, electrical power will be used to run air compressors and similar power tools.
- Equipment staging areas will be located as far as feasible from occupied residences or schools.
- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Stationary equipment shall be placed such that emitted noise is directed away from sensitive noise receptors.
- Stockpiling and vehicle staging areas shall be located as far as practical from occupied dwellings.

MM NOI-3: Prepare a Helicopter Noise Control Plan.

In the event that a utility scale solar project site would have limited access and would require the use of helicopters during operation or maintenance of a facility, the County shall prepare a Helicopter Noise Control Plan that indicates where helicopters would be used and the frequency and duration for such use. The plan shall demonstrate compliance with the noise level limits within the County Noise Element for helicopter noise to properties within 1,600 feet of proposed helicopter use locations.

4.12.6 Significant Unavoidable Adverse Impacts

Based on the implementation of Mitigation Measures NOI-1 through NOI-3, all identified utility scale project-related impacts associated with noise would be avoided or reduced below a level of significance, with no significant unavoidable adverse impacts.

4.13 POPULATION AND HOUSING

4.13.1 Existing Conditions

4.13.1.1 Population

Based on the 2010 Census, the County has a population of 18,546. With approximately 10,200 square miles of land, the County has a density of approximately 1.8 persons-per-square-mile. Much of the County's population is centered in the City of Bishop, the County's only incorporated city. Additional small towns and communities are scattered throughout the County, although they are mostly concentrated along US 395, which traverses through the Owens Valley and the County in a north-south direction. Table 4.13-1 identifies population in the County from the 2010 Census, divided by Census Tracts (CT) and lists the SEDAs and OVSA falling within the CT. The OVSA is located within portions of all six CTs in the County (CTs 1, 2, 3, 4, 5, and 8). Refer to Figure 4.13-1 for the location of the County's CTs in relation to the SEDAs and OVSA.

Table 4.13-1
INYO COUNTY 2010 POPULATION BY CENSUS TRACT IN RELATION TO THE SEDAS AND THE OWENS VALLEY STUDY AREA

Census Tract	2010 Population	SEDAs and Owens Valley Study Area within Census Tract
CT 1	2,757	Laws, Owens Valley Study Area
CT 2	1,718	Laws, Owens Valley Study Area
CT 3	2,457	Owens Valley Study Area
CT 4	5,668	Owens Valley Study Area
CT 5	2,568	Owens Valley Study Area
CT 8	3,378	Owens Lake, Rose Valley, Pearsonville, Owens Valley Study Area, Trona, Chicago Valley, Charleston View, Sandy Valley
Total Population	**18, 546**	

Source: Census 2010
CT = Census Tract
SEDA(S) = Solar Energy Development Area(s)

Table 4.13-2 identifies population associated with CDPs in the County. As discussed above, much of the County's population is centered in Bishop and the areas surrounding it. This population center includes Bishop, West Bishop CDP, and Dixon Lane-Meadow Creek CDP. These three CDPs have a total population of 9,131, which is almost half of the total County population.

Table 4.13-2 2010 POPULATIONS OF CENSUS DESIGNATED AREAS IN THE COUNTY	
Census Designated Place	**2010 Population**
Big Pine CDP	1,756
City of Bishop	3,879
Cartago CDP	92
Darwin CDP	43
Dixon Lane-Meadow Creek CDP	2,645
Furnace Creek CDP	24
Homewood Canyon CDP	44
Independence CDP	669
Keeler CDP	66
Lone Pine CDP	2,035
Mesa CDP	251
Olancha CDP	192
Pearsonville CDP	17
Round Valley CDP	435
Shoshone CDP	31
Tecopa CDP	150
Trona CDP	18
Valley Wells CDP	0
West Bishop CDP	2,607
Wilkerson CDP	563
Total	**15,517**
Areas of the County outside of a CDP	3,029
Total	**18,546**

Source: Census 2010
CDP = census designated place

Many of the CDPs occur in the US 395 corridor, including the Wilkerson, Big Pine, Independence, Lone Pine, Cartago, Olancha, and Pearsonville CDPs. These areas contain a total population of 5,324, or approximately 29 percent of the total County population. Two additional CDPs are located along the US 395 corridor, northwest of Bishop. The Round Valley and Mesa CDPs have a total population of 686, or approximately 3.7 percent of the County's total population. Three CDPs are located adjacent to each other along SR 178. These three CDPs include the Trona, Valley Wells, and Homewood Canyon CDPs; however, the total population of all three CDPs is 62, or approximately 0.3 percent of the County's total population.

The Furnace Creek CDP, with a population of 24, is located in Death Valley National Park. The Shoshone and Tecopa CDPs are located east of Death Valley National Park, with a total population of 181, or approximately 1 percent of the County total. Keeler CDP is located west of Owens Lake, with a population of 66, and Darwin CDP is located north of China Lake Naval Air Weapons Station, with a population of 43. The CDPs in the County have a total population of 15,517, with the remaining 3,029 residents of the County living outside of CDPs.

In 2000, the County had a population of 17,945 (US Census Bureau 2010). Population in the County increased by 3.2 percent from 2000 to 2010. Population estimates for the County indicate that growth is expected to remain relatively flat, with a population projection of 18,819 for the year 2030 and 19,244 for the year 2040 (Caltrans 2012).

4.13.1.2 Housing

Based on 2010 census data, Inyo County has 9,478 total housing units. Table 4.13-3 contains a summary of total, occupied, and vacant housing in the County, by CT. In 2010, 8,049 of the units were occupied, with 1,429 vacant units. Vacancy rates are lowest in the three CTs that contain Bishop and the surrounding communities (CTs 1, 3, and 4), with vacancy rates of 8.7, 8, and 9 percent, respectively. The other CTs contain much higher vacancy rates, ranging from 19.4 percent in CT 5 to a high of 24.1 percent in CT 2. The County has an average vacancy rate of 15.1 percent. Of the 8,049 housing units in Inyo County, 5,121 of the units are owner-occupied. The remaining 2,928 units are renter-occupied. Of the 1,429 vacant housing units in the County, 182 are for rent, and 90 are for sale.

Table 4.13-3
INYO COUNTY 2010 HOUSING BY CENSUS TRACT

Census Tract	Number Total Housing Units	Number Occupied Housing Units	Number Vacant Housing Units	Vacancy Rate (percent)
CT 1	1,324	1,209	115	8.7
CT 2	921	699	222	24.1
CT 3	1,156	1,064	92	8.0
CT 4	2,622	2,387	235	9.0
CT 5	1,395	1,125	270	19.4
CT 8	2,060	1,565	495	24.0
Total	**9,478**	**8,049**	**1,429**	**15.1**

Source: Census 2010
CT = Census Tract

4.13.1.3 Employment

Based on the American Community Survey 5-Year Estimates (2008-2012; US Census Bureau), in Inyo County, there are 9,610 people in the labor force. Of these, 8,911 are employed, and 699 are unemployed. Table 4.13-4 shows the County's employment characteristics. The largest employment industries in the County consist of educational services and health care and social assistance, which accounts for 19.3 percent of the labor force jobs. The arts, entertainment, recreation, and accommodation industry account for almost an identical number of jobs, providing 19.2 percent of the jobs in the labor force. Retail trade is the third largest industry in the County, accounting for 14.7 percent of the labor force. Public administration accounts for 11.1 percent of the labor force. The remaining industries account for a combined total of 35.7 percent of the labor force, with each industry accounting for 10 percent or less of the labor force.

Table 4.13-4
INYO COUNTY EMPLOYMENT CHARACTERISTICS

Industry	Labor Force Estimate	Percent of Labor Force
Agriculture, forestry, fishing and hunting, and mining	163	1.8
Construction	665	7.4
Manufacturing	295	3.3
Wholesale trade	152	1.7
Retail trade	1,314	14.7
Transportation and warehousing, and utilities	757	8.5
Information	104	1.2
Finance and insurance, real estate, and rental and leasing	241	2.7
Professional, scientific, management, administrative and waste management services	363	4.1
Educational services, and health care and social assistance	1,720	19.3
Arts, entertainment, recreation, and accommodation and food services	1,707	19.2
Other services, except public administration	444	5.0
Public administration	986	11.1
Total	**8,911**	**100**

Source: American Community Survey 2008-2012

4.13.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts on geology and soils if it would result in any of the following:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.13.3 Impact Analysis

The REGPA is designed to minimize impacts to housing opportunities in the County by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact housing resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would likely result in the greatest influx of new workers due the potential size and job opportunities associated with such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small-scale solar energy facilities. However, due to their smaller size (generally less than 20 acres), type (e.g., smaller array of ground and/or roof-mounted PV panels), and location (generally on and/or adjacent to existing developed or disturbed areas), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to population and housing against the program level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the population and housing analysis conducted for the project.

4.13.3.1 Population Growth Inducement

Construction Impacts

The State CEQA Guidelines identify a project as growth inducing if it would foster economic or population growth or the construction of additional housing either directly or indirectly, in the surrounding environment (State CEQA Guidelines Section 15126.2(d)). The proposed REGPA would not result directly in the construction of additional housing. The proposed REGPA would require temporary workforces associated construction of future solar energy developments and transmission lines. Construction workers would likely travel to different areas of the County to work on construction of such projects. The proposed REGPA could result in indirect temporary population growth if it required the construction of housing for workers associated with solar energy development projects.

Table 4.13-5 identifies temporary housing options in the County, divided by CDPs. Additional temporary housing options may be available outside of the CDPs, particularly campground spaces, which are widespread in the County; however, the table below focuses on the resources available in the CDPs (and two neighboring communities), which is where population centers are located and the most likely location of available vacant housing and hotel rooms. It is expected that future solar energy projects may be in remote locations; however, construction workers would likely seek housing options in the nearest established communities via vacant housing and apartment units available for rent, hotel rooms, and campground spaces.

Table 4.13-5
TEMPORARY HOUSING OPTIONS AND NEAREST SOLAR ENERGY GROUP

Census Designated Place	Vacant Housing Units	Available Hotel Rooms	Campground Spaces		Nearest Solar Energy Group
			With RV Hookups	Without RV Hookups	
Big Pine CDP	107	93*	10*	70*	Western
City of Bishop	178	858*	148*	200*	Western
Cartago CDP	11	0*	0*	0*	Western
Darwin CDP	18	0	0	0	Western
Dixon Lane-Meadow Creek CDP	107	0*	0*	0*	Western
Furnace Creek CDP	3	290	26	35	Eastern
Homewood Canyon CDP	12	0	0	0	Southern
Independence CDP	88	25*	0*	208*	Western
Keeler CDP	27	0	0*	0*	Western
Lone Pine CDP	173	249*	378*	83*	Western
Mesa CDP	20	0	0	0	Western
Olancha CDP	19	20*	35*	0*	Western
Pearsonville CDP	7	0	0	0	Western
Round Valley CDP	14	0	0	0	Western
Shoshone CDP	14	0	0	0	Eastern
Tecopa CDP	67	16	0	200	Eastern
Trona CDP	1	0	0	0	Southern
Valley Wells CDP	0	0	0	0	Southern
West Bishop CDP	96	0*	0*	0*	Western
Wilkerson CDP	21	0*	0*	0*	Western
Total in Inyo County	**983**	**1,551**	**597**	**796**	**--**
Pahrump, NV	2,782	254	692	0	Eastern
Ridgecrest, CA	1,393	1,050	81	0	Southern
Total in Region	**5,158**	**2,855**	**1,370**	**796**	**--**

Sources: American Community Survey 2008-2012; Furnace Creek Resort 2014; Lueck, Doug 2014; Nevada Treasure RV Resort 2014, Pahrump Chamber of Commerce 2014; Pahrump Nugget and Casino 2014; Preferred RV Resort 2014; RV Ranch and Resort 2014; Ridgecrest Area Convention and Visitors Bureau 2014; Saddlewest 2014; Tecopa Hot Springs Resort 2014; Wine Ridge RV Resort and Cottages 2014; *LADWP 2013
CDP = census designated place

The proposed REGPA includes new Economic Development Element policies (Policy ED-4.5 and Policy ED-4.7). ED-4.5 encourages renewable energy solar facility developers to employ the local labor force, during development and for long-term facility maintenance and provide educational and training opportunities, as practicable. ED-4.7 encourages renewable solar energy developers to help provide transient housing during the construction of solar energy facilities to minimize impacts to tourist accommodations.

As shown in Table 4.13-4, the construction industry accounts for approximately 7 percent of the labor force in the County. It is likely that construction work associated with future solar development within the SEDAs would utilize much of the existing construction labor force in the County; however, it is possible that construction workers would travel to the County for work associated with future solar development projects. These jobs typically are temporary work for construction workers and visiting workers to the area would stay in the County temporarily during available construction work, and return home following completion of a job. As shown in Table 4.13-5, a total of 983 housing or apartment units, 1,551 hotel rooms, and 1,393 campground spaces (597 with recreational vehicle hook ups and 796 without recreational vehicle hookups) are available for use in the CDPs of Inyo County by a temporary construction work force. Additional vacant housing, hotel rooms, and campgrounds are available in nearby Pahrump, Nevada, and Ridgecrest, California.

Depending on the location of future solar energy development that would occur, construction workers would travel varying distances to a given project site; however, based on a review of vacant housing, hotel rooms, and campgrounds, the availability of temporary housing for construction workers would be sufficient. Workers for the Laws, Owens Lake, and Rose Valley SEDAs generally would have the most temporary housing options with reasonable travel distances. Workers for projects in the Pearsonville and Trona SEDAs would be more isolated than the Laws, Owens Lake, and Rose Valley SEDAs, but would still have access to housing in Inyo County; housing options would be more readily accessible for the Pearsonville SEDA, due to its location along US 395.

The Trona SEDA is located approximately 30 miles north of the City of Ridgecrest, in Kern County. While drive times for workers in the Trona SEDA that utilize temporary housing within Inyo County would approximately 90 minutes or more, workers in this SEDA would be able to utilize temporary housing options in the City of Ridgecrest, greatly reducing travel time and providing more temporary housing options. Workers in the Pearsonville SEDA would likely utilize available temporary housing in Ridgecrest for reduced travel times to job sites.

The Chicago Valley, Charleston View, and Sandy Valley SEDAs (the Eastern Solar Energy Group) are located in a more remote portion of the County, near the Nevada border. Although adequate temporary housing is available in the County for construction workers, workers for future solar development projects occurring in the Eastern Solar Energy Group may utilize housing in nearby communities within the State of Nevada, mainly Pahrump. The Tecopa CDP would also provide some temporary housing options for workers in the Eastern Solar Energy Group. The proposed REGPA and future solar development projects within the SEDAs would generate the need for temporary housing; however, it would result in a less than significant impact associated with population growth need based on the availability of temporary housing. Impacts would be less than significant and would not require the construction of new housing.

Operational Impacts

Potential future solar development projects would have minor long-term employment needs associated with management, monitoring, and maintenance of the facilities; however, future solar development projects would not be expected to be significant employment-generating uses. A small, permanent workforce associated with the long-term operation of future solar development projects is likely to be composed, at least partially, by workers already residing in the County. Small numbers of long-term workers may relocate to the County on a permanent basis, but increases to local population associated with new workers relocating to the County would be small and insignificant compared to the existing population and available housing in the County. Thus, the long-term operation of future solar development projects would not induce substantial growth by providing a large number of new job opportunities. No new housing would be constructed as part of the proposed REGPA or future solar development projects within the SEDAs. As such, impacts associated with growth-inducing impacts would be less than significant.

4.13.3.2 Displacement of Existing Housing or People

The SEDAs contain existing housing; thus, the potential for displacement of existing housing, although unlikely given the vast amount of undeveloped land in each SEDA, is present. While it is considered unlikely that the existing housing and people in each SEDA would be displaced, an estimate of existing housing in each SEDA, based on an aerial photograph review, is summarized below in Table 4.13-6. The estimated total housing in all of the SEDAs combined is 251. If displacement of housing occurs for future solar energy development, and assuming displacement of all existing housing in the SEDAs, it would result in removal of approximately 2.6 percent of the existing housing stock in the County. It is expected that development of future solar projects within the SEDAs would not occur within the small communities established within the SEDAs, but rather on undeveloped land in each SEDA. Some housing may be removed, but it is expected that such housing would be the more isolated units and would only be a fraction of the units present within each SEDA.

Table 4.13-6
ESTIMATED EXISTING HOUSING BY SOLAR ENERGY DEVELOPMENT AREA

Solar Energy Development Area	Estimated Existing Housing
Western Solar Energy Group	
Laws	32
Owens Lake	67
Rose Valley	45
Pearsonville	27
Southern Solar Energy Group	
Trona	18
Eastern Solar Energy Group	
Charleston View	40
Sandy Valley	10
Chicago Valley	12
Total	**251**

Source: Google Earth 2014

As shown in Table 4.13-3, the County has an overall vacancy rate of approximately 15 percent. Thus, small amount of people who could be displaced as a result of future solar development within the SEDAs would likely be able to find replacement housing within the County. As such, impacts associated with the displacement of existing housing or people would be considered less than significant.

4.13.4 Level of Significance before Mitigation

Based on the analyses in Section 4.13.3, with the application of ICC Title 21, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA would result in less than significant impacts to population and housing and mitigation is not required. Small scale projects are typically considered to result in no impacts under CEQA.

4.13.5 Mitigation Measures

No mitigation measures are required provided compliance with ICC Title 21.

4.13.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse population and housing impacts would result from implementation of the proposed project.

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4.14 PUBLIC SERVICES

4.14.1 Existing Conditions

4.14.1.1 Fire Protection

There are six fire protection districts (FPD) within the boundaries of the County, including the Big Pine FPD, Bishop FPD, Independence FPD, Lone Pine FPD, Olancha Volunteer Fire Department, and Southern Inyo FPD (Inyo County 2001, as amended). The six FPDs have 127 active volunteers, but up to 170 are needed to effectively respond to the number of calls received (Inyo County Volunteer Firefighters 2014).

The FPDs respond to structure fires, wildland fires, medical emergencies, hazardous materials spills, and other emergencies (Inyo County Volunteer Firefighters 2014).

Additional fire protection services within the County include services provided by state and federal land management agencies on lands they manage. These agencies include CAL FIRE, NPS, USFS, and the BLM. These agencies also provide fire protection to areas outside of managed lands through cooperative fire protection agreements. Much of the County is located within FRAs, with LRAs scattered throughout the County. SRAs occur within the Owens Valley and the US 395 corridor. Refer to Section 4.8 for a summary of fire hazard ratings and responsibility designations for each of the SEDAs and the OVSA, and Figure 4.8-1 for the Fire Hazard Severity Zones in SRAs. The San Bernardino Unit of CAL FIRE operates two fire stations within Inyo County. One station is located in Bishop and one is located in Independence (CAL FIRE 2014).

4.14.1.2 Police Protection

Inyo County Sheriff's Department

Police protection services within Inyo County are provided by the Inyo County Sheriff's Department. The department headquarters are located in Independence with additional posts in Bishop, Lone Pine, Shoshone and Death Valley. The sheriff's department has special units including boat patrol, off-highway vehicle detail, and mounted patrol (ICSD 2014).

California Highway Patrol

The California Highway Patrol (CHP) is a statewide organization with responsibility for law enforcement for state highways and roads. Primary responsibilities of the CHP include traffic safety, service to the motoring public, and protection of state property. CHP services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents. Inyo County is located within the Inland Division of the CHP. According to the CHP, the Inland Division faces the widest spectrum of traffic enforcement challenges, due to the large patrol area (CHP 2014). The Inland Division operates two fixed-wing aircraft and two helicopters. There is one CHP area office located within Inyo County. It is located at 469 South Main Street in Bishop (CHP 2014).

4.14.1.3 Schools

There are six school districts within Inyo County, including Big Pine Unified School District (USD), Bishop USD, Death Valley USD, Lone Pine USD, Owens Valley USD, and Round Valley Joint Elementary School District (JESD) (Inyo County Office of Education 2014). Table 4.14-1 summarizes the enrollment for each of the school districts.

Table 4.14-1
SCHOOL DISTRICTS IN INYO COUNTY

School District	2012-2013 Enrollment (number of students)	Schools			
		Elementary	Middle/ Junior	High	Other
Big Pine USD	195	0	0	0	1 (K-12)
Bishop USD	1,945	1	1	2	4
Death Valley USD	80	3	0	0	2
Lone Pine USD	380	1*	0	1	1
Owens Valley USD	40	1	0	1	0
Round Valley JESD	138	0	0	0	1 (K-8)
Total	**2,778**	**6**	**1**	**4**	**9**

Source: Inyo County Office of Education Schools Directory.
Available online at: http://www.inyo.k12.ca.us/docs/10-Inyo_Schools_Directory_2012-13_10102012123527.pdf.
JESD = Joint Elementary School District
USD = Unified School District
*Lo-Inyo Elementary School includes Lo-Inyo Middle School

4.14.1.4 Parks

Inyo County maintains parks and campgrounds for use by residents and visitors (Inyo County Parks and Recreation Department 2014). Parks operated by the County Parks and Recreation Department include seven parks located in Bishop, Big Pine, Independence, and Lone Pine. Bishop parks include the Millpond Recreation Area, Izaak Walton Park, and Starlight Park. Mendenhall Park is located in Big Pine, and Spainhower Park is located in Lone Pine. Dehy Park and Independence Park are located in Independence. The County Parks and Recreation Department operates lower elevation campgrounds readily accessible from US 395, including Diaz Lake, Portagee Joe, Independence Creek, Taboose Creek, Tinnemaha Creek, Millpond, Baker Creek, Pleasant Valley, Glacier View, Brown's Town, and Tecopa Park and Campground.

4.14.1.5 Other Public Facilities

There are two hospitals located in Inyo County. Northern Inyo Hospital is located in Bishop and Southern Inyo Hospital is located in Lone Pine. Northern Inyo Hospital is a 25-bed critical access, not-for-profit hospital providing 24-hour emergency care services (Northern Inyo Hospital 2014). Southern Inyo Hospital provides general medical and surgical care for inpatient, outpatient, and emergency room patients and provides 24-hour emergency care services (Southern Inyo Healthcare District 2014). Ambulance services for Southern Inyo Hospital are provided by the Lone Pine FPD, which operates three ambulances, and the Independence FPD that operates two ambulances; both are staffed by volunteer emergency medical technicians and Lone Pine has a volunteer paramedic. Patients who require transfers are transported via ambulance, fixed-wing plane, or helicopter to the nearest and most medically appropriate facility. Lower-acuity cases are often transferred to North Inyo Hospital in Bishop, while high-acuity cases are generally sent to Washoe Medical Center in Reno, Nevada or Loma Linda University Medical Center, in Loma Linda, California (Southern Inyo Healthcare District 2014).

4.14.1.6 Regulatory Framework

State Regulations

California Code of Regulations Title 14

Under Title 14 of the CCR, CAL FIRE has the primary responsibility for implementing wildfire planning and protection for the SRAs. CAL FIRE has responsibility for the protection of over 31 million acres of California's privately owned wildlands, and also provides emergency services within 36 of California's 58 counties through local government contracts (CAL FIRE 2014). CAL FIRE's services include responding to emergencies that may occur on a daily basis, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes.

Senate Bill 50

Senate Bill 50 (passed in 1998) sets forth a state school facilities construction program that includes restrictions on a local jurisdiction's ability to condition a project or mitigation of a project's impacts on school facilities in excess of fees set forth in Education Code 17620. The provisions of Senate Bill 50 allow the state to offer funding to school districts to acquire school sites, construct new school facilities, and modernize existing school facilities. Senate Bill 50 also establishes a process for determining the amount of fees developers may be charged to mitigate the impact of development on school facilities resulting from increased enrollment. Under this legislation, a school district could charge fees above the statutory cap only under specified conditions, and then only up to the amount of funds that the district would be eligible to receive from the state. This program has been found by the legislature to constitute "full and complete school facilities mitigation."

Local Regulations

Inyo County General Plan

Land Use Element

- Policy LU-1.16: Impacts of New Development on Infrastructure Improvements, Public Facilities, and Services. The impacts of discretionary projects shall be assessed as required by CEQA and appropriate, feasible, mitigation will be required at the time such projects are approved and as provided by law. Mitigation required for such projects may include the collection of fees to offset impacts to infrastructure, public facilities, and services.

- Goal LU-5: Provide adequate public facilities and services for the existing and/or future needs of communities and their surrounding environs, and to conserve natural and managed resources.

- Goal PSU-1: To ensure the timely development of public facilities and the maintenance of adequate service levels for these facilities to meet the needs of existing and future County residents.

- Policy PSU-1.1: Facilities and Services for New Development. The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).

- Policy PSU-1.2: On-Site Infrastructure. The County shall require all new development, including major modifications to existing development, to construct necessary on-site infrastructure to serve the project in accordance with County standards.

- Goal PSU-2: To ensure that adequate facility and service standards are achieved and maintained through the use of equitable funding methods.

- Policy PSU-2.2: Fair Share of Costs. The County shall require that new development pays its fair share of the cost of developing new facilities and services and upgrading existing public facilities and services. Exceptions may be made when new development generates significant public benefits (e.g., low income housing) or when alternative sources of funding can be identified to offset foregone revenues.

- Goal PSU-8: To protect the residents of and visitors to Inyo County from injury and loss of life and to protect property from fires.

- Policy PSU-8.1: Fire Protection for New Development. Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities can be provided.

- Policy PSU-8.2: Education. The County shall identify key fire loss problems and design appropriate fire safety education programs to reduce fire incidents and losses.

- Goal PSU-9: To provide adequate law enforcement services to deter crime and to meet the growing demand for services associated with increasing populations and commercial/industrial development in the County.

- Policy PSU-9.1: Law Enforcement Facilities. Within the County's overall budgetary constraints, the County shall provide law enforcement facilities (including substation space, patrol, and other vehicles, necessary equipment, and support personnel) sufficient to maintain service standards.

- Policy PSU-9.3: Law Enforcement Support. The County shall work with federal law enforcement agencies to ensure appropriate coordination and maximum use of available resources for the protection of public safety in the County.

- Goal PSU-11: To ensure that adequate school facilities are available and appropriately located to meet the needs of Inyo County residents.

- Policy PSU-11.1: Provision of Facilities. The County shall continue to support local school districts in providing quality education facilities that will accommodate projected changes in student enrollment.

- Policy PSU-11.2: Planning for New Facilities. The County shall work cooperatively with local school districts in monitoring housing, population, and school enrollment trends and in planning future school facility needs, and shall assist the districts in identifying appropriate sites for new schools in the County.

- Policy PSU-11.6: Funding. The County and school districts should work closely to secure adequate funding for new school facilities. The County shall support the school districts' efforts to obtain appropriate funding methods such as school impact fees.

Public Safety Element

- Goal WF-1: Prevent wildfires and provide public safety from wildfire hazards.

- Policy WF-1.1: Fire Protection Agencies. Support expansion of fire protection agencies and volunteer fire departments, and continue to cooperate with federal, state, local agencies and private landowners to provide greater fire protection for the County.

- Policy WF-1.2: Limitations in Fire Hazard Zones. Discourage development within high fire hazard severity zones.

- Policy WF-1.3: Fuel Modification. Require fuel modification for structures within fire hazard zones.

4.14.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant or potentially significant impacts on public services if it would result in any of the following:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

1. Fire Protection
2. Police Protection
3. Schools
4. Parks
5. Other Public Facilities

4.14.3 <u>Impact Analysis</u>

The REGPA is designed to minimize impacts to the County's ability to provide public services by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact the County's public service resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would likely result in the greatest influx of new people and/or people associated with the facility due the potential size and job opportunities associated with such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size (e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to population and housing against the program level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the population and housing analysis conducted for the project.

4.14.3.1 Fire Protection

Future solar development projects in the SEDAs would require fire protection services in the event of fire, hazardous materials incidents, medical emergencies, or other emergency situations. The SEDAs are generally located in more remote areas of the County, where provision of fire protection would take some time to be provided. Table 4.14-2 summarizes the FPDs in the County, as well as approximate distances and drive times to nearby SEDAs. In addition to the FPDs identified, additional fire protection services in the County include state and federal land management agencies on lands they manage, as well as CAL FIRE.

Table 4.14-2
FIRE PROTECTION DISTRICTS IN RELATION TO THE SOLAR ENERGY DEVELOPMENT AREAS

Fire Protection District Station	Nearby SEDAs	Approximate Distance on Area Roads to SEDA (miles)	Approximate Drive Time[1] from Station to SEDA Boundary (minutes)
Big Pine FPD[2] 181 North Main Street Big Pine, CA	Laws	20	22
Bishop FPD[2] 209 West Line Street Bishop, CA	Laws	6	10
Independence FPD[2] 200 South Jackson Street Independence, CA	Owens Lake	25	28
	Rose Valley	39	38
Lone Pine FPD[2] 130 North Jackson Street Lone Pine, CA	Owens Lake	9	14
	Rose Valley	24	25
	Trona	93	102
	Pearsonville	62	61
Olancha Cartago Volunteer Fire Department[3] P.O. Box 64 Olancha, CA	Rose Valley	0.8	3
	Owens Lake	1	3
	Trona	85	88
	Pearsonville	39	36
Southern Inyo FPD 410 Tecopa Hot Springs Road Tecopa, CA	Charleston View	15	20
	Sandy Valley[4]	39	107
	Chicago Valley	18	25

Source: Google Earth 2014
FPD = Fire Protection District
SEDA = Solar Energy Development Area
[1] Drive time is based on anticipated drive time for the distance indicated, and does not include preparation time for FPDs in response to a call.
[2] Located within Owens Valley Study Area (OVSA).
[3] The Olancha Cartago Volunteer Fire Department does not have a physical station. Distance to nearest SEDA boundary is provided based on distance from the intersection of US 395 and State Route 190 in the community of Olancha.
[4] Due to the proximity of the Inyo County portion of the community of Sandy Valley, located within the Sandy Valley SEDA to Clark County, the first responders for fire, medical, or law enforcement emergencies are from Nevada (Inyo County 2001)

Some of the SEDAs are located at distances that would require over an hour drive time to the SEDA boundary from the nearest fire stations. Depending on the location of future solar development projects within the SEDAs, drive time could be greater than that identified. Of the eight SEDAs, only three (Laws, Owens Lake, and Rose Valley) are located within an estimated 10-minute drive time from the nearest station. The Charleston View, Chicago Valley, and Pearsonville SEDAs have intermediate drive times of approximately 20, 25, and 36 minutes, respectively. Some of the more remote SEDAs have excessive estimated drive times from the nearest station, including the Trona SEDA, with an estimated 88-minute drive, and the Sandy Valley SEDA, with an estimated 107-minute drive from the nearest stations.

While future solar development projects within the SEDA are not expected to have a higher than average fire hazard in relation to other development projects, they would nonetheless introduce additional human activity to undeveloped areas, resulting in additional potential for fire protection and emergency service needs. Also, the remote locations of some of the SEDAs would result in the commitment of fire protection resources to a larger than average time commitment for emergency services response, thereby reducing resources available elsewhere during the response time.

The Sandy Valley SEDA has an expected drive time distance of approximately 107 minutes. A fire protection services response to the Sandy Valley SEDA would require approximately 3.5 hours drive time, round trip, in addition to the time needed at the site to address the emergency situation. Due to the proximity to Clark County, Nevada, the first responders for the California portion of the community of Sandy Valley (within the Sandy Valley SEDA) for fire, medical, or law enforcement emergencies are from Clark County. Based on the travel time for Inyo County fire protection providers to provide services to the Sandy Valley SEDA, and the lack of paved access to the existing community within the Sandy Valley SEDA from Inyo County (Inyo County 2001), first responders from Clark County would continue to provide services to the community of Sandy Valley and potentially future solar development projects within the SEDA.

The proposed REGPA includes a proposed Economic Development policy (Policy ED-4.4) which requires renewable energy solar facility development to provide the means to offset the costs to the County, including, but not limited to, the cost of infrastructure improvements and County services. This policy also indicates that economic impacts from renewable energy solar facility development identified by the County shall be offset. Additionally, existing General Plan polices already in place require the provision of public facilities and services to new development and the payment of fees for new development to offset impacts to existing services and infrastructure. Nonetheless, for the reasons described above, the commitment of fire protection resources to future solar development projects is a potentially significant impact, requiring mitigation.

4.14.3.2 Police Protection

Police protection service needs for future solar development projects could be associated with increased traffic along access routes to the project site. Construction of future solar development projects would generate activity at respective project sites, including trips to and from the project sites for hauling of project materials and the transport of construction workers to the site. This increased activity could result in an increase in vehicle accidents along the route to a project site. The need for law enforcement at future solar development project sites could also occur for incidents related to worker conflicts and potential vandalism and/or theft during construction and long-term operation of the projects. Table 4.14-3 summarizes the law enforcement station locations in the County, identifies nearby SEDAs, and lists approximate distances and drive times between the stations and SEDA boundaries. The approximate response times are estimated drive times from the nearest stations to the SEDA boundaries and therefore represent minimum expected drive times to future project sites in the SEDAs. Depending on the location of future projects within the SEDA, drive times could be longer than those identified in the table below.

Table 4.14-3
LAW ENFORCEMENT STATIONS IN RELATION TO THE SOLAR ENERGY DEVELOPMENT AREAS

Station	Nearby SEDAs	Approximate Distance on Area Roads to SEDA (miles)	Approximate Drive Time[1] from Station to SEDA Boundary (minutes)
Inyo County Sheriff's Department			
Independence Substation[2] 550 South Clay Street Independence, CA	Owens Lake	25	30
	Rose Valley	39	38
	Pearsonville	38	63
	Trona	108	116
Bishop Substation[2] 301 West Line Street Bishop, CA	Laws	5	8
Shoshone Resident Post 15 California 127 Shosone, CA	Chicago Valley	7	13
	Charleston View	25	35
	Sandy Valley	50	131
Death Valley Resident Post Furnace Creek Ranch Death Valley, CA	Chicago Valley	64	71
	Charleston View	82	92
	Sandy Valley[3]	104	164
California Highway Patrol			
CHP Bishop Office[2] 469 South Main Street Bishop, CA	Laws	5	8

Sources: ICSD 2014; Google Earth 2014
CHP = California Highway Patrol
SEDA = Solar Energy Development Area
[1] Drive time is based only on anticipated drive time for the distance indicated, and does not include preparation time in response to a call or response from elsewhere in the County instead of the station.
[2] Within Owens Valley Study Area (OVSA)
[3] Due to the proximity of the Inyo County portion of the community of Sandy Valley, located within the Sandy Valley SEDA to Clark County, the first responders for fire, medical, or law enforcement emergencies are from Nevada (Inyo County 2001)

While existing law enforcement is in place in the County, the ICSD and CHP provide services to a large area. Some of the SEDAs are located in isolated areas, particularly the Eastern Solar Energy Group (consisting of the Chicago Valley, Charleston View, and Sandy Valley SEDAs). The existing community within the Sandy Valley SEDA receives first responder service from Clark County, Nevada for emergency calls, including law enforcement. Based on the travel time for Inyo County emergency service providers to provide services to the Sandy Valley SEDA, and the lack of paved access to the existing community within the Sandy Valley SEDA from Inyo County (Inyo County 2001), first responders from Clark County would continue to provide services to the community of Sandy Valley and potentially future solar development projects within the SEDA.

The Trona SEDA is also located remotely from the nearest law enforcement station, at approximately 108 miles. While law enforcement responding to calls in the SEDAs would not necessarily be responding or travelling from the nearest substation, as officers may be out patrolling portions of the vast County, it is expected that response times to several SEDAs would be excessive, and a round trip to a project site within some of the SEDAs and back to a substation would take a considerable amount of time, potentially removing law enforcement resources that are needed elsewhere in the County.

The REGPA includes a proposed Economic Element policy which requires renewable energy solar facility development to provide the means to offset the costs to the County for county services. Additional General Plan policies are also in place for offsetting the cost of providing services to new development, as listed in Section 4.14.1 above. Nonetheless, the need for law enforcement services for future solar development project sites in the SEDAs is a potentially significant impact, requiring mitigation.

4.14.3.3 Schools

Demand for new and/or expanded school facilities are directly associated with increases in local population. Future solar development projects are not expected to result in the construction of new housing, and thus, would not result in a direct increase in population or school-aged children in the County. As discussed in Section 4.13, temporary jobs are expected to be associated with the construction of future solar development projects; however, these jobs are largely expected to be filled by construction workers already living in the County, or by visiting workers that travel to the area for temporary construction employment. It is not expected that construction workers traveling from outside of the County to work on future solar development projects would relocate families with school-aged children during the term of their temporary work. Thus, construction of future solar development projects in the County would not be expected to result in an increase in school age children or result in impacts to the capacity of local schools.

Also as discussed in Section 4.13, long-term job generation associated with future solar energy development projects is expected to be low. Minor long-term employment needs are expected to be associated with the operation of future solar development projects and would include jobs associated with management, monitoring, and maintenance of the facilities. This relatively small, permanent workforce is likely to be composed, at least partially, by workers already residing in the County. Small numbers of long-term workers may relocate to the County on a permanent basis and bring families with school-aged children. Future solar development projects would be subject to the payment of school mitigation fees required by Senate Bill 50. As such, impacts to schools would be considered less than significant.

4.14.3.4 Parks

As discussed for school facilities above, future solar development projects are not expected to result in substantial direct or indirect population increases. Temporary jobs would be generated during construction of individual future solar development projects; however, these jobs are not expected to result in permanent population increases in the County. Small amounts of long-term jobs could be generated as a result of future solar development projects; however, any population increases associated with long-term jobs for future solar development projects is expected to be minor. These jobs may be filled by persons already residing in the County or small numbers of long-term workers may relocate to the County on a permanent basis to fill these positions. Regardless, the small amount of jobs generated from long-term operation of future solar development projects is expected to result in a minimal increase in population, and thus, a minimal increase in the usage of local parks. Impacts would be less than significant, pursuant to ICC Title 21 and the REGPA policies.

4.14.3.5 Other Public Facilities

The project would not result in a noticeable increase in demand for emergency services at the hospitals located within the County. While there is potential for an accident requiring emergency hospital services to occur at the remote location of future solar development projects in the SEDAs, this potential is similar to other activities already occurring in the County at remote locations. Future solar development projects within the SEDAs would have temporary construction work forces at these remote sites, and thus, the potential need for emergency hospital services associated with construction work would be temporary and insignificant. Long-term activity at future solar development project sites would involve limited personnel presence at each site associated with maintenance, monitoring, and management of facilities. Medical emergencies requiring hospital services are expected to be minimal during the long-term operation of future solar development projects.

Medical emergencies requiring hospital services occurring within the Laws SEDA would likely utilize the Northern Inyo Hospital, while emergencies occurring in the Owens Lake and Rose Valley SEDAs would likely utilize the Southern Inyo Hospital. The other SEDAs are located at greater distances from the two Inyo County hospitals and would likely require the use of hospital services outside of the County during medical emergencies. Desert View Regional Medical Center in Pahrump, Nevada, is located approximately 20 miles (estimated 28-minute drive) from Chicago Valley SEDA, approximately 16 miles (estimated 39-minute drive) from the Charleston View SEDA, and approximately 44 miles (estimated 87-minute drive) from the Sandy Valley SEDA. Ridgecrest Regional Hospital is located in the City of Ridgecrest in Kern County, south of Inyo County. Ridgecrest Regional Hospital is approximately 27 miles (estimated 33-minute drive) from the Trona SEDA and approximately 21 miles (estimated 28-minute drive) from the Pearsonville SEDA. The need for hospital services is expected to be minimal, and the availability of hospitals both within and outside of the County would result in minimal impacts to hospital services associated with future solar projects. Impacts would be less than significant, pursuant to ICC Title 21 and the REGPA policies.

4.14.4 Level of Significance before Mitigation

Based on the analyses in Section 4.14.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to fire and police protection. These impacts require mitigation to reduce them to the maximum extent feasible. Impacts associated with schools, parks, and other public facilities would be less than significant and no mitigation is required. Small scale projects are typically considered to result in no impacts under CEQA.

4.14.5 Mitigation Measures

Public services mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to public services. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on public services and would not require an analysis of public safety and response times or implementation of the public services mitigation measures listed in this section. In such cases, the County shall document that no impacts to public services would occur and no mitigation measures are necessary in lieu of the analysis required in Mitigation Measure PUB-1.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact geological resources and soils, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.6.3 and 4.6.4, implementation of solar energy projects under the REGPA could result in potentially significant impacts related to public services. Accordingly, the following mitigation measures are provided to address those issues, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would reduce the severity of identified impacts to public services, and may reduce them to below a level of significance in most cases.

MM PUB-1: Analyze public safety and protection response times and staff levels for each utility scale project.

Site specific analysis of fire and police protection service response times and staffing levels shall be completed for proposed future solar development projects, as deemed appropriate by the County, at the cost of the project applicant, prior to final project design approval of each project. The analysis shall include a determination regarding a project's impact to fire and police protection services and outline feasible measures to maintain adequate response times for fire and police protection services.

MM PUB-2: Provide onsite security during the construction and long-term operation of the utility scale project.

For project sites associated with proposed future solar development projects that are determined through Mitigation Measure PUB-1 to have insufficient law enforcement protection services or significant impacts to law enforcement services, project proponents shall be required to provide adequate, onsite private security for the duration of construction activities and during the long-term operation of the project to the satisfaction of the County. The actual size and configuration of the security detail shall be determined by the County during preparation of the Development Agreement for the future solar energy project.

MM PUB-3: Pay mitigation fees for public safety and protection services.

The County shall require project proponents to pay development mitigation fees for fire and police protection services, pursuant to ICC Title 21. Said fees shall be used to maintain proper staffing levels for fire and police protection services and to sustain adequate response times as required by the County.

4.14.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse public service impacts would result from implementation of the proposed project.

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4.15 RECREATION

4.15.1 Existing Conditions

The County contains vast areas of undeveloped open space areas rich in natural resources and features that provide a variety of outdoor recreational opportunities. Most of the land within the County is publically owned. Public agencies provide and manage various outdoor recreational facilities and resources that are heavily frequented by visitors and residents alike. These recreational resources are described below and their locations are shown on Figure 4.15-1.

4.15.1.1 Parks

County Parks

The Inyo County Parks and Recreation Department manages and maintains seven parks within the County that total approximately 139 acres of parkland. Existing County parks are summarized in Table 4.15-1.

Table 4.15-1
INYO COUNTY PARKS

Park	Location	Size (acres)	Amenities
Millpond Recreation Area	220 Sawmill Road Bishop	124.9	Play equipment, softball fields, tennis courts, horseshoe pits swimming pond, and gazebo with tables and barbeque.
Izaak Walton Park	3600 West Line Street Bishop	2.1	Play equipment, event-size barbeque, large serving area, and creek.
Starlite Park	880 Starlite Drive Bishop	1.0	Play equipment, tennis court, and picnic tables.
Mendenhall Park	370 North School Street Big Pine	4.8	Play equipment, basketball court, picnic gazebo, and horseshoe pit.
Dehy Park	435 North Edwards Street Independence	1.4	Play equipment, horseshoe pit, basketball court, restroom, and creek.
Independence Park	609 East Edwards Street Independence	0.5	Shaded areas and restroom.
Spainhower Park	445 North Main Street Lone Pine	4.1	Play equipment, lawn area, tennis and basketball courts, horseshoe pit, gazebo, and creek.

Source: Inyo County Parks 2014

Death Valley National Park

Most of the 3 million acre Death Valley National Park is located within the eastern portion of Inyo County. Death Valley is a major tourist destination and provides a multitude of recreational facilities, including campgrounds, hiking and mountain biking trails, historic sites, museums, and back country roads.

4.15.1.2 Campgrounds

The Inyo County Parks and Recreation Department operates 11 lower elevation campgrounds readily accessible from US 395 within the County, including Diaz Lake, Portagee Joe, Independence Creek, Taboose Creek, Tinnemaha Creek, Millpond, Baker Creek, Pleasant Valley, Glacier View, Brown's Town, and Tecopa Park and Campground. All of these campgrounds support surface water features and offer fishing.

In addition to County-operated campgrounds, there are numerous campgrounds on federal land, including within Death Valley National Park, Inyo National Forest, and BLM lands. There are also numerous private campgrounds throughout the County.

4.15.1.3 Historical Sites/Points of Interest

The County contains many historical sites and notable points of interest that provide recreation for visitors and residences. Major historical sites and points of interest include, but are not limited to: Manzanar National Historic Site; Cerro Gordo Ghost Town; Scotty's Castle; Stovepipe Wells; Armargosa Hotel and Opera House; Mount Whitney Fish Hatchery; Lone Pine Film History Museum; Austin Home; Putnam's Stone Cabin; Earthquake Victims Grave; Eastern California Museum; Laws Railroad Museum; Ancient Bristlecone Pine Forest; Fossil Falls; and, Alabama Hills.

4.15.1.4 Dispersed Recreation

Dispersed recreational activities are those that are not limited to a specific location such as campgrounds or parks. Such outdoor activities can occur in larger use areas on a regional level as well as a local level. Given the amount of open space and wilderness areas within the County, there is an abundance of natural resources that support dispersed recreational activities. Types of dispersed recreational activities that are available in certain geographic areas of the County include the following:

- Fishing
- Hunting
- Hiking and backpacking
- Off-highway vehicle (OHV) riding
- Rock climbing
- Horseback riding
- Mountain biking
- Boating
- Hang gliding
- Rockhounding (i.e., recreational mining)
- Wildlife and nature viewing
- Birding
- Wilderness camping
- Scenic Driving

Fishing is common at many of the numerous lakes, ponds, streams, and rivers within the County. Boating is also provided at many of the lakes. Hunting is dispersed throughout the County and is popular for big game, and birds including waterfowl. Hiking and backpacking primarily occurs within wilderness areas and forest land with trailheads that lead to a large network of trails within the many mountain ranges and valleys. OHV riding and all-terrain vehicle (ATV) use is a popular activity that occurs in designated OHV areas, as well as within certain areas of the Inyo National Forest and BLM lands.

Popular locations for rock climbing include Mount Williamson, Mount Brewer, Charlotte Dome, Mount Clarence King, North Guard, Central Peak, Mount Gardiner, Dragon Peak, Mount Tyndall, Owens River Gorge, the Alabama Hills, and the Buttermilks. Horseback riding takes place primarily within the John Muir Wilderness and Inyo National Forest. Inyo County also has approximately 2,500 miles of unpaved rural roads and trails used by hikers and mountain bikers, including abandoned railroad corridors and roads maintained by the Inyo National Forest, NPS, BLM, SCE, and the LADWP. Hang gliding is most popular in the summer months and occurs on mesa tops. Rockhounding is common in areas off of US 395. Wildlife and nature viewing is provided in most areas of the County, but particularly within the wilderness areas and forest land. Similarly, birding is popular in natural open space areas and at Owens Lake. Wilderness camping occurs within Death Valley, the Inyo National Forest, and BLM lands. Scenic driving is provided in most areas of the County due to the abundance of scenic resources, and there are officially designated state scenic highways and scenic byways.

4.15.1.5 Other Recreational Facilities

In addition to the outdoor recreational resources and facilities described above, the County contains a few golf courses (Mount Whitney Golf Course, Bishop Country Club, Furnace Creek Golf Course, and Trona Golf Club), several recreational vehicle parks, a few hot springs, and eco-tourist locations that provide recreation opportunities for residents and visitors.

4.15.1.6 Regulatory Framework

Federal Regulations

Omnibus Public Federal Land Management Act

The Omnibus Public Federal Land Management Act was passed in 2009 and protects more than two million acres of land as designated wilderness in nine states; designates over 1,000 miles of Wild and Scenic Rivers; and established three national parks, three national conservation areas, four national trails, ten national heritage areas, and a national monument. It also created several water conservation, habitat restoration and land management programs, and gives formal recognition to the 26 million-acre National Landscape Conservation System. Among these protected wilderness lands include approximately 350,000 acres within the Inyo National Forest and BLM land.

Federal Land Policy and Management Act

The FLPMA was enacted in 1976 and governs the way in which public lands administered by the BLM are managed. The FLPMA is the landmark legislation that provides a framework for managing federal land in perpetuity for the benefit of present and future generations. Under the FLMPA, public lands are to be managed "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."

National Trails Systems Act

The National Trails Systems Act (16 USC 1241), enacted in 1968, created a series of national trails "to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the nation." This act established three types of trails, including the National Scenic Trails, National Recreation Trails, and connecting-and-side trails. The National Trails System currently consists of 30 National Scenic and Historic Trails and over 1,000 National Recreation Trails, and two connecting-and-side trails, with a total length of more than 50,000 miles. The National Trails provide for recreational activities of hiking, horseback riding, mountain biking, and camping. Trails within Inyo County that are part of the National Trails System include the Pacific Crest National Scenic Trail and Old Spanish National Historic Trail.

Inyo National Forest Land and Resource Management Plan

The Inyo National Forest Land and Resource Management Plan (LRMP) provides direction for management activities in the Inyo National Forest. The LRMP guides where and under what conditions an activity on national forest lands can occur and includes guidance on the provision of recreational opportunities.

National Park Service Management Policies

The NPS Management Policies (2006) provide broad policy guidance for the management of units of the national park system. Topics include park planning, land protection, natural and cultural resource management, wilderness preservation and management, interpretation and education, recreational uses, special uses of the parks, park facilities design, and concessions management.

State Regulations

California State Parks Off-Highway Motor Vehicle Recreation Division

The Off-Highway Motor Vehicle Recreation Program was created in 1971 to manage off-highway recreation, while balancing the need to protect the state's resources. In addition to providing accessibility to off-highway recreation for hikers to bikers to bird watchers, the program provides a variety of services and benefits to California's residents and visitors, including resource management of state lands, wildlife habitat protection, youth development and law enforcement.

California Outdoor Recreation Plan

The California Outdoor Recreation Plan is the statewide master plan for parks, outdoor recreation, and open space for California. The plan provides policy guidance to all outdoor recreation providers, including federal, state, local, and special district agencies that provide outdoor recreational lands, facilities and services throughout California.

Local Regulations

Lower Owens River Recreation Use Plan

The Lower Owens River Recreation Use Plan provides a conceptual framework to protect the area from the unintended consequences of increased use. The plan's purpose is to support LORP goals while creating opportunities for local residents and visitors to experience recreation, learn more about the ecosystem, and become active stewards of the lower Owens River. Fishing, birding, wildlife viewing, hunting, and OHV riding are the most popular recreation activities within the LORP area.

Owens Valley Land Management Plan

The LADWP owns and manages approximately 250,000 acres in Inyo County, mainly within the Owens Valley floor. Approximately 75 percent of LADWP land in Inyo County is open to the public for recreational uses such as fishing, hiking, hunting, nature studies, photography, painting, and other daytime recreational uses. LADWP's OVLMP (2010) provides management direction for resources on all city of LADWP lands in the County (excluding the LORP area discussed above). Resource management issues include water supply, habitat, recreation and land use. The OVLMP provides a framework for implementing management prescriptions through time, monitoring the resources, and adaptively managing changed land and water conditions.

Inyo County General Plan

Recreational resources are addressed within the Conservation/Open Space Element of the Inyo County General Plan. Section 8.9, Recreation, contains the following goals and policies:

- Goal REC-1: Develop a public parks, recreation, and open space system that provides adequate space and facilities to meet the varied needs of County residents and visitors.

- Policy REC-1.1: Natural Environment as Recreation. Encourage the use of the natural environment for passive recreational opportunities.

- Policy REC-1.2: Recreational Opportunities on Federal, State, and LADWP Lands. Encourage continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands.

- Policy REC-1.3: Existing Park Facilities. Enhance existing County recreational parks and campground sites.

- Policy REC-1.4: Adequate Parkland. The County shall provide adequate parkland throughout the County. The County shall provide parkland dedication and/or developer fees for new subdivisions within the County to provide adequate recreation space for residents.

- Policy REC-1.5: Distribution of Community Parks. The County shall ensure that community parks are located to ensure equitable distribution of facilities within the County.

- Policy REC-1.6: Range of Recreational Activities/Facilities. The County shall provide for a broad range of active and passive recreational activities in community parks. When possible, this should include active sports fields and facilities in community parks that will provide for the needs of leagues and programs.

- Policy REC-1.7: Park Design. The County shall ensure that community members are involved in the design and development of all park facilities.

4.15.2 Significance Thresholds

The thresholds for determining significance under CEQA are based on Appendix G of the State CEQA Guidelines. In this analysis, the proposed project would have significant impacts associated with recreation if it would result in any of the following:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.15.3 Impact Analysis

The REGPA is designed to minimize impacts to recreation opportunities in the County by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact recreational resources.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would likely result in the greatest influx of new workers due the potential size and job opportunities associated with such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific recreation impacts against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the recreation analysis conducted for the project.

4.15.3.1 Recreational Use Impacts

Utility scale solar energy development is not compatible with recreation uses. Implementation of solar energy projects that would displace or preclude existing or planned recreational uses would result in direct impacts. In determining and identifying the proposed SEDAs, the County has identified areas that may be appropriate for solar energy development projects through analysis of geographic, physical, cultural, and environmental constraints and opportunities. Among these considerations, areas containing recreational uses and resources were generally not included in the SEDAs so that direct impacts to existing recreational resources would be avoided. Associated direct impacts to recreational uses would be less than significant.

In addition to direct impacts, indirect impacts to existing recreational resources could occur if solar energy projects would block or remove access to recreational areas due to solar energy development. As discussed above, the SEDAs have largely been sited in areas that do not contain recreational resources; thus, it is not anticipated that blockage or severance of access routes to recreational areas would occur. Associated indirect impacts to recreational uses would be less than significant.

4.15.3.2 Population Based Park and Recreation Facility Impacts

Demands for parks and recreational facilities are directly related to local population levels. Future solar development projects within the SEDAs and the OVSA would not be expected to result in substantial direct or indirect population increases. Temporary construction jobs would be generated during construction of individual future solar development projects, the number of which depends on the type and size of the project. Peak construction workforces for solar energy projects generally range from approximately 400 to 1,400 daily workers, with averages from about 100 to 400 or more workers over construction periods ranging from 2 to 4 years.

Construction personnel could use parks and other recreational facilities near the specific project site or their housing. It is anticipated that most of the construction workforce would come from the local or regional employment pool, but some would likely come from areas outside of the County. Construction workers that currently reside in the County would not create an increased demand for recreational facilities as they have already been accounted for in current population levels. Temporary construction workers that come from areas outside the County could, depending on their permanent housing location and distance from the specific project site, stay in temporary housing within the County. The housing needs of the temporary influx of construction workers would be spread throughout the County at various areas in relative proximity to the SEDAs. These workers would represent a temporary population increase, and although they could use nearby park and recreational facilities within the general locale of the project site during project construction, they are not expected to relocate to the area with their families and they are not expected to generate a substantial demand for local park services. Associated impacts would be less than significant.

A small number of long-term jobs associated with operations and maintenance would be generated as a result of future solar development projects; however, any population increases associated with long-term jobs for future solar development projects is expected to be minor. Operations crews could number approximately 150 for large solar energy projects, but are anticipated to number 10 to 50 operation and maintenance workers. Minor long-term employment needs are expected to be associated with the operation of future solar development projects and would include jobs associated with management, monitoring, and maintenance of the facilities. These jobs may be filled by persons already residing in the County or some long-term workers may relocate to the County on a permanent basis to fill these positions. Regardless, the small number of jobs generated from long-term operation of future solar development projects is expected to result in a minimal increase in the County's population, and thus, a minimal increase in the usage of local parks. Associated impacts would be less than significant.

Implementation of the proposed project would not include development of recreational facilities and would not cause population growth that would generate the need to construct or expand recreational facilities. The proposed project also does not include a recreational component, such as a hotel, resort, campground, or other facility that would attract or accommodate an increase in visitors to the area that would indirectly increase the use or demand for recreational and park facilities and services. No associated impacts would occur.

4.15.3.3 Distributed Generation, and Community Scale Facilities

The recreation analysis focuses on utility scale solar energy facilities because those would result in the greatest change to the natural environment due the potential size and expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation, and community scale, facilities. Although the proposed REGPA would include provisions for development of smaller scale solar energy facilities, these facilities would be expected to result in a lesser level of impact because of their smaller size (generally less than 20 acres), type (e.g., smaller array of ground-mounted PV panels or roof-mounted PV panels), and location (generally on-site within, or adjacent to, existing developed areas). Impact conclusions apply to all proposed categories of solar energy facilities. The potential impact to recreation stemming from implementation of distributed generation, and community scale facilities is less than significant; mitigation is unwarranted.

4.15.4 Level of Significance before Mitigation

Based on the analyses in Section 4.15.3, with the application of ICC Title 21, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA would result in less than significant impacts to recreation and mitigation is not required. Small scale projects are typically considered to result in no impacts under CEQA.

4.15.5 Mitigation Measures

No mitigation measures are required provided compliance with ICC Title 21.

4.15.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse recreation impacts would result from implementation of the proposed project.

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4.16 SOCIOECONOMICS

4.16.1 Existing Conditions

4.16.1.1 Population

Inyo County is rural, with approximately 10,200-square miles of land and 18,627 people (California Department of Finance 2014), resulting in a population density of 1.8 persons per square-mile. Most of the land in the County is held in public ownership (92 percent of County lands are under federal management). Less than 2 percent of County lands are privately-owned and in the County's jurisdiction; 3.9 percent is owned by the City of Los Angeles as part of LADWP holdings (Inyo County 2014a). The County has only one incorporated city (City of Bishop). Most of the County's population lives in Bishop or in the areas immediately surrounding it. The rest of the population lives in small towns scattered throughout the County, with most located along the US 395 corridor in the Owens Valley.

Table 4.16-1 summarizes the currently published and forecasted population trends for the County and the City of Bishop. As shown, the majority of population within the County is contained within unincorporated areas. Based on the projected growth for the County, an increase of 3,436 persons through 2040 would result in an 18.5 percent increase in total population.

Table 4.16-1
2014 POPULATION PROFILE AND 2020, 2030, AND 2040 POPULATION PROJECTIONS FOR INYO COUNTY

Area	2014 Population	2020 Projected Population	2030 Projected Population	2040 Projected Population
Inyo County (includes Bishop)	**18,627**	**19,350**	**20,428**	**22,009**
Bishop	3,889	N/A	N/A	N/A

Source: California Department of Finance 2014a and 2014b
N/A = population projections are unavailable.

4.16.1.2 Employment

Table 4.16-2 summarizes the current employment base for the County. Also provided is employment for two industry types strongly influenced by renewable energy development: construction and utility trades. As shown, construction employment accounts for only 2 percent of the total County workforce. However, the broader trades and utilities category accounts for 17 percent of the total workforce.

Table 4.16-2 2014 EMPLOYMENT PROFILE FOR INYO COUNTY				
Area	**2014 Total Workforce**	**2014 Unemployment (percent of total)**	**Workers in Construction Occupations (percent of total)**	**Workers in Utility Occupations[1] (percent of total)**
Inyo County	8,380	561 (7%)	170 (2%)	1,430 (17%)

Source: California Department of Finance 2014a
[1] Includes all identified in the Trade, Transportation, and Utilities category.

Table 4.16-3 summarizes 2010 to 2020 projections of employment by industry type within the Eastern Sierra Metropolitan Statistical Area (MSA), which contains Inyo, Alpine, and Mono Counties. Metropolitan Statistical Areas are geographic entities defined by the US Office of Management and Budget for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. An MSA contains a core urban area with a population of 50,000 persons or more, and consists of one or more counties; the counties comprising an MSA include the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core (Census 2014). Because this MSA includes the County, the employment numbers for the overall MSA shown in Table 4.16-3 also include the employment statistics identified above in Table 4.16-2 for the County only.

Because the County is considered rural, it is likely the local construction workforce is willing to regularly commute longer distances (up to a two-hour commute) when compared to larger urban centers. Therefore, as the workforce would serve all SEDAs, this socioeconomic analysis is for the County as a whole, and does not focus on specific SEDA locations. It should be noted that the bulk of the County's population, core services, and infrastructure are in the Owens Valley. However, socioeconomic effects extend throughout the County. The Eastern Sierra MSA can be used to define a regional workforce in addition to the localized County employment presented in Table 4.16-2. As shown in Table 4.16-3, the Eastern Sierra MSA yields a construction workforce accounting for approximately 7 percent of the total workforce for that region. These skilled workers would be available for renewable energy projects and infrastructure construction.

Table 4.16-3 EASTERN SIERRA METROPOLITAN STATISTICAL AREA 2010 EMPLOYMENT PROFILE AND 2020 EMPLOYMENT PROJECTIONS					
2010			**2020**		
Total Workforce	**Construction Occupations[1]**	**Utility Operation Occupations[2]**	**Total Workforce**	**Construction Occupations[1]**	**Utility Operation Occupations[2]**
17,310	1,220	100	18,690	1,240	110

Source: California Department of Finance 2014b
[1] Includes those identified in the Construction Management, Architecture and Engineering, and the Construction and Extraction trade categories.
[2] Includes those identified in the Plant System Operators, Power Distributors and Dispatchers, Power Plant Operators, and Plant and System Operators trade categories

4.16.1.3 Housing

Table 4.16-4 summarizes 2014 housing unit availability for the County and the City of Bishop, with these numbers including owner-occupied and rental units. As shown, the unincorporated areas of the County (County total minus City of Bishop) contain a higher number of vacant housing units when compared to the City of Bishop.

Table 4.16-4
2014 HOUSING PROFILE FOR INYO COUNTY

Area	Number Total Housing Units	Number Single-Family Units	Number Multi-Family Units	Number Mobile Homes Units	Number Vacant Units (Vacancy Rate Percentage)
Inyo County[1]	**9,499**	**5,846**	**1,075**	**2,578**	**1,434 (15.1)**
City of Bishop	1,926	849	707	370	177 (9.2)

Source: California Department of Finance 2013b
[1]Numbers and percentages include the City of Bishop.

Short-Term Temporary Housing

The construction of infrastructure projects often requires specialized workers from outside of the local, and even regional, workforce area. Depending upon the duration of their work assignment, these workers either look for short-term housing (apartments) or transient housing (hotels, motels, and recreational vehicle parks). Table 4.16-4 identifies the numbers of multi-family (apartments) within the County. Because the County provides substantial outdoor recreational opportunities, a number of transient housing opportunities are also available within the County. The total number of available hotel/motel rooms and recreational vehicle (i.e., mobile homes) spaces available within the County fluctuates based on demand. Because the County recreational opportunities occur in both mountainous and desert areas, it is assumed recreational demand for transient housing occurs year-round.

A substantial amount of the County is under the jurisdiction of federal land management agencies, such as the BLM and the USFS) operate campgrounds within the County. Except for areas with specific camping regulations, vehicle camping is allowed anywhere on BLM administered land within 300 feet of any posted open route (BLM 2014). There is a 14-day limit for camping in any one location. After 14 days, campers wishing to stay in the area longer are required to move 25 miles from their original campsite. Long-term camping is available by permit in visitor areas on BLM lands, but because these areas are for recreational use only, workers would not be permitted to live in these areas (BLM 2014).

Camping is also allowed on National Forest System lands within the National Forest, which contains 107 campgrounds and picnic areas, with over 2,300 individual sites. USFS reservation campgrounds are operated on a first come, first served basis. The maximum stay in most USFS campgrounds is 14 days, with a 21-day maximum stay per ranger district, per calendar year (USFS 2014). Therefore, given the restrictions on BLM and National Forest System lands, camping facilities on federally managed public lands are not expected to provide viable temporary housing opportunities for workers.

4.16.1.4 Local Economy

The County's economy has historically relied on natural resources as its base. This includes cattle ranching to supply miners with food during the gold rush, extracting a wide variety of minerals found in the County, sheepherding, growing orchard and vegetable crops, and tourist based activities that take advantage of the unique landscapes and wildlife the County has to offer. In recent times, the County has relied more on tourist based activities and services, as well as, government and land management as its main economic drivers. Renewable energy development has also played a role in the County's economy, with the Coso Geothermal Power Plant and several hydroelectric generating facilities located within the County.

4.16.1.5 Public Finance

Table 4.16-5 summarizes the fiscal year 2013–2014 budget for the County. The purpose of this baseline data is to establish the revenue and expenditure base of the County. As shown, the budget totals $81,447,453 in expenditures and $76,933,477 in revenues. With respect to the general fund portion of revenues, aid from other government agencies and local taxes accounts for the majority of County revenue. Meanwhile, public protection accounts for the largest County expenditure.

Table 4.16-5
FISCAL YEAR 2013–2014 MUNICIPAL BUDGET FOR INYO COUNTY

General Fund Revenues		**Total Expenditures by Function**	
Misc. Funds	$30,574,322	Public Protection	$25,387,171 (31.17%)
General Fund Revenue Total	$46,359,155	Health & Public Assistance	$21,151,904 (25.97%)
Aid From Other Govt. Agencies	$22,850,428 (49.29%)	General Government	$20,264,126 (24.88%)
Taxes - Property	$10,922,217 (23.56%)	Roads & Airports	$12,958,290 (15.91%)
Charges For Current Services	$5,998,875 (12.94%)	Education & Parks	$1,669,673 (2.05%)
Taxes - Other	$2,994,801 (6.46%)	All Other	$16,289 (0.02%)
Other Revenue	$1,070,896 (2.31%)	**Total**	**$81,447,453**
Fines & Forfeitures	$1,005,994 (2.17%)		
Taxes - Sales	$908,639 (1.96%)		
Licenses & Permits	$435,776 (0.94%)		
Use of Money & Property	$171,529 (0.37%)		
Total	**$76,933,477**		

Source: Inyo County 2014b

4.16.1.6 Regulatory Framework

County regulations relevant to the proposed project include sections of the County's Zoning Ordinance (ICC Title 18) and the Renewable Energy Ordinance (ICC Title 21).

Inyo County Codes Title 18: Zoning Ordinance, and Title 21: Renewable Energy Ordinance

In the case of noncommercial wind energy generation, the County has included in its zoning code Chapter 18.79, Regulation of Small Wind Energy Systems. Chapter 18.79 includes development standards applied to small wind energy systems and a requirement that a Conditional Use Permit, which requires Planning Commission approval with a public hearing, as well as CEQA review, are necessary for all applications to build them. The stricter requirements applying to noncommercial wind energy systems are primarily derived from aesthetic, noise, and safety concerns.

ICC Title 21, the Renewable Energy Ordinance of the County Code, encourages and regulates the development of solar and wind resources for the generation and transmission of clean, renewable electric energy. To encourage small-scale, private PV systems for solar energy production, the County has created an expedited permitting process.

ICC Title 21 provides standards for commercial scale wind and solar energy development. Under ICC Title 21, the construction of any commercial solar thermal, photovoltaic, or wind energy power plant, or an electric transmission line associated with these types of power plants, requires the developer to either obtain a renewable energy permit or renewable energy impact determination or enter into a renewable energy development agreement with the County, and each choice is subject to CEQA review. Which one a developer uses is generally based on the size and type of facility that is being constructed. For smaller scale projects a renewable energy permit can be appropriate. The permit must be approved by the Planning Commission, which requires a public hearing. The specific development standards attached to a renewable energy permit are decided on a case by case basis, and can address the same requirements found in the rest of the County's zoning code such as noise, light and glare, height, setbacks, and distance between structures.

Large-scale commercial facilities that are required to obtain approval from the CEC or the CPUC prior to construction are exempt from the County's requirement to obtain a renewable energy permit. They are, however, required to obtain a renewable energy impact determination. The purpose of the renewable energy impact determination is to ensure that the development standards and/or mitigation measures that would otherwise be addressed in a renewable energy permit are to the extent possible, incorporated into any approval of the facility granted by a state or federal agency.

The last option, a renewable energy development agreement, is designed to encourage and support the development of renewable energy projects. These exempt developers from the requirement of obtaining a renewable energy permit or renewable energy impact determination and, instead, are tailored to each project and developer through negotiations with the County. The process for entering into a renewable energy development agreement with the County are specified in ICC Title 20–Development Agreements. All commercial scale renewable energy developments, per ICC Title 21, must also be consistent with the General Plan.

ICC Title 21 states: "By this title, the County intends to: (1) support and encourage the responsible development of its solar and wind resources to generate and transmit clean, renewable electric energy while protecting the health, safety and welfare of its citizens and its environment, including its public trust resources, by requiring that the adverse impacts of such development are avoided or acceptably mitigated; (2) recover the County's costs of increased services resulting from such development; and (3) ensure that the citizens of the County's equitably share in the benefits resulting from the use of such resources."

4.16.2 Significance Thresholds

State CEQA Guidelines Section 15131 states, "…[e]conomic or social information may be included in an EIR or may be presented in whatever form the agency desires." It is important to note that: "…(a) economic or social effects of a project shall not be treated as significant effects on the environment…" The County's proposed project objectives include minimizing any negative direct and indirect economic impacts on the County's residents due to solar energy development. Although socioeconomic issues are not typically addressed in a topic specific EIR section, socioeconomics is an issue of concern to the County; therefore, the information in this section is presented to better inform the REGPA process.

4.16.3 Socioeconomic Effects Analysis

This section discusses typical socioeconomic effects associated with the siting of solar energy facilities and associated transmission infrastructure. The focus is on the overarching nature of socioeconomic effects, and the influence solar energy development has on outlying communities and services, as they relate to County economics, services, and its population. The County's development of goals and policies within the REGPA would be expected to facilitate responsible development of these future projects. The following sections outline the proposed goals, policies, and management strategies of the REGPA that would help offset socioeconomic effects of future solar energy project development.

The following impact analysis primarily focuses on utility scale solar energy facilities because those would result in the greatest environmental change due the potential expanse of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities. The proposed REGPA also includes provisions for development of small-scale solar energy facilities. However, due to their small size(e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

Pursuant to ICC Title 21, the County routinely reviews all solar energy development proposals for effects on socioeconomics. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific effects on socioeconomics against the program level analysis contained in this PEIR.

4.16.3.1 Renewable Energy Facilities

As described in Section 4.3.4, various sizes of renewable energy facilities could be constructed under the REGPA, including: utility-scale (greater than 20 MW of generation), distributed generation (less than 20 MW of generation for off-site use, consumption, or sale), community scale (uses renewable solar resources to generate energy for a specific community's use and located near the community it serves). Utility scale renewable energy projects have the greatest potential for population in-migration, both temporary and permanent, and overall economic stimulus within the County. This is due to the scale of development and the associated workforce needed to implement utility scale projects. Therefore, this analysis primarily addresses utility-scale development.

Economic models such as the NREL Jobs and Economic Development Impact (JEDI) models are user-friendly tools that estimate the number of workers and economic impacts of constructing and operating utility scale renewable energy facilities at the local and state levels. The County could utilize the JEDI model (or similar) when utility-scale projects are proposed to estimate socioeconomic effects, both adverse and beneficial, to determine the applicability of the proposed REGPA goals and policies (see Section 4.16.5), and the need for further mitigation of socioeconomic impacts of future projects.

Utilizing the JEDI model, a 100-MW utility scale solar PV project was used as an example to generate economic data. The results of this example are provided in Table 4.16-6. This example is not meant to be used as a benchmark, but only as a sample of output information generated by the JEDI model (by varying assumptions the output could vary). This example model run utilizes the default JEDI model input values for California to show a sample of the predicted economic data outputs available through JEDI. The project example JEDI model outputs do not provide estimates for property tax generated because only certain components of a solar PV installation are currently subject to property tax; project specific details would be required to determine those outputs. The JEDI model can estimate property tax generation when specifics are known.

Table 4.16-6
JEDI OUTPUT FOR SAMPLE 100 MW UTILITY-SCALE PROJECT

Criterion	Output Value[1]
Project Construction and Installation Cost	591,549,298
Local Spending	329,549,298
Construction Sales Tax (Materials and Equipment Purchases)	21,615,000
Total Construction Employment	1,776
Construction and Installation Labor	682
Construction and Installation Related Services	1,094

Table 4.16-6 (cont.)
JEDI OUTPUT FOR SAMPLE 100 MW UTILITY SCALE PROJECT

Criterion	Output Value[1]
Indirect employment from construction (module and supply chain)	1,584
Induced employment from construction	864
Total annual operational expenses	68,171,148
Direct operating and maintenance costs	1,993,000
Local spending	1,833,560
Operational annual sales tax (materials and equipment purchases)	65,769
Operations employment	19
Indirect employment from operations (local revenue and supply chain)	5
Induced employment from operations	4

Source: Aspen 2014
JEDI = Jobs and Economic Development Impact
[1] Values in 2010 dollars

Depending on the number of distributed generation facilities and the amount of power generated, population growth and economic benefits would vary. Community distributed generation facilities, such as rooftop solar, would have less potential for long term population and economic stimulus given the scale of development. In addition, because the overall population of the County is low, development of community-scale facilities designed to provide power to a specific use would likely be a business or community decision, and the overall location within the County would be difficult to predict. However, because of the size, they would also have less potential for long term population and economic stimulus. For individual distributed generation projects greater than 1 MW, the County can utilize the JEDI model to estimate the number of jobs and economic impacts to the affected local area. The JEDI model recommends a minimum project size of 1 MW, which would require between 7 to 10 acres of land. Rooftop solar and other small distributed generation facilities would help stimulate a relatively small local business development market within the County, such as small companies specializing in residential and commercial rooftop solar installation and maintenance.

4.16.3.2 Population In-Migration

Construction

Construction of future utility-scale solar energy (thermal and PV) and transmission projects would bring workers into the County. The temporary in migration of construction workers has the greatest potential for adverse effects because construction of utility scale renewable energy and transmission projects typically requires large numbers of temporary workers, many of whom have specialized skills. These specialized workers may not usually reside proximate to the project site and may choose to temporarily relocate to the area. As shown in Table 4.16-6, JEDI predicts 1,776 construction employees for a hypothetical 100MW solar PV project (although the maximum workers on site at any given time would likely be much fewer). While not all workers would be needed onsite at once, when compared to the construction workforce available within the County (Table 4.16-2) and regional Eastern Sierra MSA (Table 4.16-3), it can be assumed a substantial number of workers would come from outside of the area and temporarily relocate for some duration during construction of utility scale projects.

Adverse effects occur when the influx of temporary workers exceeds the amount of available housing, public services levels, and results in overall social disruption. Additionally, the County short term housing supply accommodates recreationists and tourists, a vital part of the County's economy. The potential for negative effects related to a diminished short term housing supply is increased within the County due to the rural nature of the County and its small clusters of communities.

Operations and Maintenance

Operations and maintenance of renewable energy facilities and transmission lines typically require relatively few workers (when compared to the size of the construction workforce). Many maintenance workers can be trained from the local workforce; therefore, the operation of these facilities normally does not result in large scale in-migration of workers into local communities. As discussed in more detail below, all new renewable energy facilities would require interconnection into the electric grid (i.e., transmission or distribution interconnections). Helicopters and transient crews often conduct maintenance of transmission line facilities. Due to the length of transmission lines operated by utilities, these workers typically only require residence near a service region. Therefore, in-migration of transmission maintenance workers into the County is expected to be nominal.

While operation of future renewable and transmission projects may not substantially increase the population in the vicinity at an individual level, cumulative renewable energy project development is expected to generate some level of permanent population in-migration to the County. As shown in Table 4.16-2 and Table 4.16-3, both the County and the overall Eastern Sierra MSA contain an existing workforce skilled in utility operations. However, it is unknown how many workers would be needed for future renewable energy facilities and how the local workforce could provide for such a demand. In the long term, operational worker in-migration to the County as a result of utility scale renewable energy project development would likely be a small portion of the overall projected population growth for the County (Table 4.16-1).

4.16.3.3 Economic Effects

Renewable energy development has the potential to add to the County's economic base. An initial boost to the local economy can happen during construction in the form of an increase in the labor force that requires goods and services, land sales, and the use of local materials. In the long term, it can provide higher property and sales tax revenues, the continued use of local materials, and the provision of some long term jobs that can, in turn, generate a permanent increase in the procurement of local goods and services. The County is also well positioned, with an above average potential to provide solar energy generation within the designated SEDAs. Economic and service disruptions (adverse effects) are also possible and discussed under Section 4.16.4.4.

Utility Scale and Distributed Generation Renewable Energy Development

Temporary in-migration of construction workers (and possibly their families) into the County would occur primarily during construction of utility scale solar energy projects and transmission infrastructure. Additionally, projects exceeding 20 MW would result in the greatest total capital expenditure. Positive economic and tax base effects would occur during construction from expenditures on worker wages and salaries, as well as from procurement of goods and services required for project construction. Additionally, these workers would temporarily increase the demand for transient housing.

As discussed earlier, the County could use the publicly available JEDI model to estimate the number of jobs and economic impacts that can reasonably be supported by each utility and distributed generation scale renewable energy project application. While JEDI results are intended to be estimates, not precise predictions, it provides jobs, earnings, and output estimates distributed across three categories:

- Project development and onsite labor impacts;
- Local revenue and supply chain impacts; and,
- Induced impacts.

The JEDI output results could then be used along with the County's REGPA goals, policies, and mitigation strategies to make responsible planning decisions during project pre-application processes, and help developers propose projects with maximized economic benefits and minimized negative economic effects.

Future development of distributed generation throughout the County would add a small cumulative economic benefit over time because these installations slowly stimulate economic growth to contractors and reduce electricity bills to residents and businesses (allowing more local spending). However, due to the relatively limited number of housing units within the County (Table 4.16-4), rooftop solar would have finite effects (i.e., limited to available and feasible rooftops). The County does not contain high numbers of residential or commercial structures when compared to more urbanized areas of California. The County should continue to encourage community-scale and other distributed generation projects that are intended to power (or supplement) larger point source demands such as electricity needs of institutional uses (e.g., government buildings, hospitals, schools, etc.) and municipal utility uses (water pumping stations, etc.).

Electric Infrastructure Development

All new solar energy facilities would require interconnection into the electric grid (i.e., transmission or distribution). Major transmission upgrades most likely would be limited to the Chicago Valley, Charleston View, Sandy Valley, and Trona SEDAs. The Trona SEDA would require a lower voltage transmission upgrade due to the MW cap on this SEDA. Like renewable energy electrical generation projects, electric infrastructure interconnection projects also would bring economic benefits from construction spending, operation and maintenance capital expenditures, and worker local spending. Furthermore, transmission lines and substations are subject to appraisal and property tax payments to the state, which helps increase funds distributed to the County. Therefore, from an economic perspective, electric infrastructure development would have beneficial effects for the County.

Federal and State Renewable Energy Policies and Incentives

A number of federal and state incentives and programs are available to renewable energy developers to help offset the cost of constructing and operating utility scale installations. Additionally, both federal, state, and electric utility provider programs are in place to help homeowners offset the cost of distributed generation installations, primarily rooftop solar projects intended to provide power for the onsite use. These federal and state incentive and programs help encourage renewable energy development.

Section 2229 of the Revenue and Taxation Code requires the Legislature to reimburse local agencies annually for certain property tax revenues lost as a result of any exemption or classification of property for purposes of ad valorem property taxation. However, under AB 1099, no appropriation is made for an "active solar energy system" and the state shall not reimburse local agencies for property tax revenues lost to them pursuant to the bill (California 2014 and 2005). California AB 1451 further extended the exclusion to the 2015-2016 fiscal year (California 2008).

Consequently, the involved state agencies have interpreted the law to mean that solar energy projects are required to pay property taxes only on certain components of their project such as administrative offices and maintenance areas. These projects would also be required to pay 25 percent of the cash value of pipes and ducts used to carry energy derived from solar energy. Under the state agencies' interpretation, the solar energy system itself is excluded from the definition of "new construction" and the assessment of property taxes on that system. This exclusion holds on projects constructed through the 2015-2016 fiscal year. Unless this is extended, projects constructed after 2016 would pay property taxes normally. Additionally, if the facility is sold to a new owner, property taxes are assessed normally and without exclusion. Potential adverse impacts on County revenue from property value exemptions are discussed below under the social disruption impacts to public services.

4.16.3.4 Social Disruption Effects

Housing Availability

During construction of utility scale renewable energy facilities and larger distributed generation facilities, the temporary in-migration of construction workers would likely result in an increased demand for transient housing. Because outdoor recreation is a vital part of the County's economy, a disruption to available transient housing could result in adverse local economic impacts. Because the County is not heavily populated, the potential for this impact is elevated in comparison to more urbanized areas. As construction of larger utility scale renewable energy projects can extend for multiple years, a substantial increase in transient housing demand could have a sustained economic impact if outdoor recreationists and other visitors are unable to find adequate accommodations.

While new economic development policy strategies are identified within the REGPA to facilitate local hiring, additional recommendations are provided below in Section 4.16.6 to supplement proposed REGPA policies and further reduce the potential negative effects to the local transient housing market.

Public Service Levels

The effects of renewable energy development on levels of public service provision are a concern for the County. The majority of the land in the County is held in public ownership (federally managed lands), with less than 2 percent of the County being privately owned lands under County jurisdiction. While federal agencies dedicate fire and police services for their lands, the County is responsible for providing public safety to its own population in addition to its responsibilities on public lands. Renewable energy and electric infrastructure facilities can pose public safety risks, and large scale utility scale projects and associated construction worker population in-migration can result in negative effects to existing public service ratios and response times; this is particularly true if the influx of construction workers exceeds the population levels planned for by the County.

While utility scale solar energy facilities currently receive some level of property tax exemption within the state, transmission and, often some amount of on and off site facilities, are subject to annual property taxation. Utility scale energy facilities constructed by the City of Los Angeles are exempt from property taxation. Property taxes from such facilities would help contribute to state funds provided to the County that can be used for local public safety and school funding. As shown in Table 4.16-5, a large portion of the County General Fund revenue is from other government agencies such as the state. Property taxes collected by the state for utility scale projects would result in an indirect positive economic effect on County general funds. At present, state agencies have interpreted the law as prohibiting property tax assessments on solar component (panels, mirrors, solar boiler, heat exchangers) improvements (Section 73 of the California Taxation and Revenue Code). Additional components included under the exemption include storage devices, power conditioning equipment, transfer equipment, and parts.

Local spending during construction of solar energy projects will help the local economy and increase sales tax revenue to the County. While development at all scales generates some level of local economic stimulus, utility scale and larger distributed generation projects would generate the greatest positive economic effect. In the event any direct operational employees or indirect/induced employees were to permanently relocate to the County, it is assumed that some percentage of this population would purchase homes and contribute to the local community through the payment of property taxes and overall local income spending.

Ultimately, when negative demands on public services and positive economic offsets are compared, the critical concern is overburdening public services (mainly fire and police protection) from the temporary in-migration of construction workers. While new economic development policy strategies are identified within the REGPA to offset County costs (refer to Section 4.16.5), additional recommendations are provided below in Section 4.16.6 to supplement proposed REGPA policies and further mitigate potential negative effects on County public service levels and the demands placed on providers.

4.16.4 Relevant Renewable Energy General Plan Amendment Policies

Multiple goals, strategies, and policies are identified in the REGPA to help alleviate negative effects from solar energy development. A number of these polices are intended to guide the overall process between the County and developers to ensure adverse effects of future development are analyzed and diminished to the extent feasible. The following identifies policies proposed by the County within the REGPA that directly relate to socioeconomics:

New Land Use Implementation Measure

3. The County shall consider seeking compensation for the loss of revenues from potential Renewable Energy Solar Facilities that are not developed within the County due to possible impacts on military readiness, special status species, aesthetics, and/or other barriers to development of appropriate Renewable Energy Solar Facilities. Methods of compensation include but are not limited to Payment-in-lieu of Taxes (PILT) or similar programs.

New Economic Development Policies

- Policy ED-4.4: Offset the Cost to the County for Service Provision. Renewable Energy Solar Facility development shall be required to provide the means to offset the costs to the County, including but not limited to, the cost of infrastructure improvements and County services, and lost economic development potential. Economic impacts from Renewable Energy Solar Facility development identified by the County shall be mitigated or offset.

- Policy ED-4.5: Employ and Train Local Labor. The County shall encourage Renewable Energy Solar Facility developers to employ the local labor force, during development and for long-term facility maintenance and provide educational and training opportunities, as practicable.

- Policy ED-4.6: Compensation to Local Communities. The County shall encourage renewable solar energy developers to provide compensation in the form of reduced rates for communities impacted by development.

- Policy ED-4.7: Provide Transient Housing. The County shall encourage renewable solar energy developers to help provide transient housing during the construction of solar energy facilities to minimize impacts to tourist accommodations.

New Mineral and Energy Resources Policies

- Policy MER-2.6: Avoid, Minimize, or Mitigate Impacts. The County shall work with renewable energy solar developers and other agencies to avoid, minimize, or mitigate impacts to the social, economic, visual, and environmental resources of the County from Renewable Energy Solar Facility development.

- Policy MER-2.8: Reclamation Planning. The County shall work with Renewable Energy Solar Facility developers to provide and implement a reclamation plan to return the site of each project to pre-project conditions or another appropriate state (i.e., native, reuse, etc.). The reclamation plan shall include financial assurances, such as bonding, for the cost of decommissioning, reclaiming and revegetating (if required) each Renewable Energy Solar Facility including removal of all equipment and accessory structures related to the facility, including but not limited to solar collector arrays, mounting posts, substations, electrical infrastructure, transmission lines, operations and maintenance buildings, appurtenant energy storage facilities and other accessory structures.

New Visual Resources or Economic Development Implementation Measure

1. Work with applicants, economists, and visual resource experts to develop a standardized method to quantify economic impacts from lost visual resources due to renewable energy solar facility development to the County's tourist economy.

4.16.5 Management Measures

Although the proposed REGPA policies discussed in Section 4.16.5 would help reduce potential adverse socioeconomic effects of solar energy development, further management measures are proposed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) to ensure that potential negative effects are diminished to the extent practicable. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following management measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof-top or ground mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential adverse effect on socioeconomics and would not require implementation of the management measures listed in this section. In such cases, the County shall document that no adverse effect on socioeconomics will occur and no management measures are necessary.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential have an adverse effect on socioeconomics, then the following management measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or management measures shall be at the discretion of a qualified county planner. The following economic management strategies are recommended for inclusion within the REGPA:

MM SOC-1: Minimize impacts on transient housing.

To further offset potential negative effects and increased demand on transient housing, General Plan Policy ED-4.5, Employ and Train Local Labor, shall be supplemented with the following:

- For renewable energy projects where the construction schedule exceeds one-year, community monitoring programs shall be developed that would identify and evaluate transient housing demand and other socioeconomic effects utilizing economic models such as JEDI. Measures developed for monitoring may include the collection of data reflecting the workforce demands and social effects (such as tracking any demonstrable drop in recreational usership) as a result of increased transient housing demand from construction workers at the local and County level.
- Project developers shall work with the County, local chambers of commerce, and/or other applicable local groups to assist transient workers in finding temporary lodging. If temporary lodging is not available, developers of utility-scale projects shall consider the feasibility of providing on-site temporary housing accommodations for all projects.

MM SOC-2: Minimize impacts on County public services.

To further off-set potential negative effects on County public services, General Plan Policy ED-4.4, Offset the Cost to the County for Service Provision, shall be supplemented with the following:

- Cooperative agreements between project applicants and the County shall be secured prior to issuance of a building permit or project-specific entitlement to ensure the following:

  Unless property taxation of a renewable energy installation is deemed sufficient by the County, project applicants shall pay a fair-share public service impact fee. A potential method for estimating a fair-share contribution could be calculated by:

  [annual service budget] X [estimated number of temporary workers temporarily in-migrating ÷ County population served].

  The public service fee (and formula used for calculating fair-share) shall be adjusted based on the duration of project construction (e.g., a project only lasting 9 months would utilize 75 percent of the annual budget, one lasting 1.5 years would utilize 150 percent of the annual budget, etc.); and

- Project applicants shall maximize the County's receipt of sales and use taxes paid in connection with construction of the project by methods such as including language in construction contracts identifying jobsites to be located within the County and requiring construction contractors to attribute sales and use taxes to the County in their Board of Equalization filings and permits.

4.16.6 Unavoidable Adverse Effects

There is a potential that the proposed project could lead to adverse socioeconomic effects; policies were proposed within the REGPA to reduce these potentially adverse socioeconomic effects, and additional strategies are identified in Section 4.16.7 to further minimize the potential for negative effects. With implementation of the proposed REGPA policies, ICC Title 21 and in conjunction with the management measures outlined in Section 4.16.7, it is envisioned that the County would be able to maintain its current economic condition and not realize an adverse fiscal impact from construction and operation of solar energy facilities.

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4.17 TRANSPORTATION AND CIRCULATION

4.17.1 Existing Conditions

4.17.1.1 Transportation Network

Travel in the County is primarily automobile oriented due to the rural nature of the local communities, low development densities, and limited options for using alternative modes of travel. The roadway system serving the County is comprised of approximately 3,520 miles of roadway and highways. The system is built around a backbone of state and federal highways, including US 395, US 6, SRs 127, 136, 168, 178, and 190 that connect with a network of local roadways and private and federally controlled roads. These regional highways are described below and illustrated in Figure 4.17-1.

US Highway 395

US 395 is the major north-south transportation corridor that traverses the County. It is designated as a Rural Principal Arterial, and is part of the National Highway System and included in the Subsystem of Highways for the Movement of Extra Legal Permit Loads systems. US 395 is also a federal Surface Transportation Assistance Act route, authorized for use by larger trucks.

US 395 passes through the states of California, Nevada, Oregon, and Washington. Approximately 95 percent of the traffic on US 395 within Inyo County originates from outside the County, which indicates that US 395 carries a substantial amount of interstate and interregional travel. Approximately 16 to 18 percent of the traffic in Inyo County on US 395 consists of recreational vehicles, and 6 to 16 percent of the traffic consists of trucks (Inyo County Local Transportation Commission 2009).

In Inyo County, US 395 is generally a four lane highway with some sections that are two lanes. In downtown Bishop, US 395 is four lanes with limited on street parking and a posted speed limit of 25 miles per hour.

US Highway 6

US 6 originates in Bishop where it intersects with US 395. US 6 is a two lane, east-west highway that connects Inyo and Mono Counties, and the state of Nevada and continues east throughout the country. As US 6 enters/leaves Bishop, it is a north-south roadway which transitions to an east/west roadway near Montgomery Pass, Nevada. It is a well-traveled truck route.

State Route 127

SR 127 is a two lane road that traverses the southeast corner of Inyo County and it originates in San Bernardino County at I-15 in Baker. The route heads north into Inyo County through Shoshone, where it intersects SR 178, and it also intersects SR 190 at Death Valley Junction. SR 127 provides access to Death Valley National Park via connections with SR 178 and SR 190.

State Route 136

SR 136 is a two lane road originating at US 395 south of Lone Pine. The route proceeds southeast along the north side of Owens Lake for approximately 18 miles where it connects to SR 190. SR 136 provides access to the historic sites of Dolomite, Swansea, and Keeler along the northeastern side of Owens Lake.

State Route 168

In Inyo County, SR 168 originates near Lake Sabrina in the Inyo National Forest, approximately 18 miles southwest of Bishop. In the Sierra Nevada (for approximately 10 miles) the roadway is two lanes with long, steep grades. This section of roadway is primarily used for recreation and to provide access to residential areas within the forest. During the winter the higher elevations of the road receive considerable snowfall but the road is kept open between Aspendell and Bishop. Near Bishop, the roadway is two lanes with a continuous two-way left-turn lane and it is designated as a bicycle route.

At US 395, there is a break in the continuity of SR 168. It continues northeast from Big Pine, approximately 15 miles south of Bishop, providing access to the ancient bristlecone pine area and Deep Springs Valley. The route then passes into Mono County and Nevada. The road is steep and winding as it traverses the White Mountains.

State Route 178

SR 178 is a two lane road that begins in Kern County and heads east through Ridgecrest and Trona. After a 56-mile unconstructed gap between Trona Road in San Bernardino County and the eastern boundary of Death Valley National Park in Inyo County, SR 178 meets SR 127 just north of Shoshone, diverts to the south, and then continues northeast toward Pahrump to the Nevada state line.

State Route 190

In Inyo County SR 190 is a two lane road that begins at Olancha and heads eastward along the south side of Owens Lake. The road travels around the southern end of the Inyo Mountains where it provides access to Darwin, the Panamint Valley, the Panamint Range, Death Valley National Park, and terminates at SR 127 at Death Valley Junction.

Table 4.17-1 presents the existing peak hour volumes, percentage of trucks, and roadway levels of service (LOS) on major roadway facilities within Inyo County. LOS is the professional industry standard term used to denote the different operating conditions that occur on a given roadway segment or intersection. LOS is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometrics, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection and is defined on a scale of A to F, where LOS A represents the best operating conditions, and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering and little or no delays. LOS F facilities are characterized as having highly unstable, congested conditions with long delays. In general, LOS D or better is considered acceptable for roadway, freeway, and intersection operations.

Table 4.17-1
EXISTING ROADWAY CONDITIONS IN INYO COUNTY

Roadway	Peak Hour Volume	Truck Percentage	LOS
US 6 at US 395 in Bishop	383	12	B
SR 127 in Shoshone	157	11	A
SR 127 at SR 190	130	22	A
SR 136 at US 395	112	2	A
SR 168 in Big Pine	899	3	C
SR 178 in Shoshone	149	9	A
SR 190 at SR 136	108	5	A
US 395 at SR 190	1,020	12	D
US 395 at SR 136*	1,215	17	A
US 395 in Independence	1,195	10	D
US 395 in Bishop at SR 168*	1,682	6	A
US 395 at Ed Powers Drive*	1,165	10	A

Source: Inyo County Regional Transportation Plan 2009
LOS A = level of service with free flowing traffic
LOS B = level of service with reasonably free flowing traffic
LOS C = level of service with a stable flow of traffic, at or near free flow
LOS D = level of service approaching an unstable flow of traffic
SR = State Route
US = US Highway
*Four-lane segment. All others are two lanes.

4.17.1.2 Public Transportation

No passenger or freight rail service currently exists in Inyo County and air travel is limited. The Eastern Sierra Transit Authority offers fixed route and dial-a-ride bus service in and between the populated areas of Inyo and Mono Counties in addition to an interregional route between Reno, Nevada and Lancaster, California. Existing fixed route bus routes along US 395 include stops at Pearsonville, Coso Junction, Olancha, Lone Pine, Independence, Aberdeen, Big Pine, and Bishop. Dial-a-ride service is provided in Lone Pine and Bishop. Figure 4.17-2 illustrates existing public transit routes in the County.

4.17.1.3 Bicycle Facilities

Inyo County communities can be traversed in under 20 minutes by bicycle, making bicycling a practical alternative travel mode for trips within the unincorporated towns and their nearby vicinities. Intercity bicycle commuting is limited by long distances, limited availability of alternatives to US 395, and weather.

The County has 2.2 miles of Class I bicycle facilities, two Class II bicycle facilities, 11.2 miles of Class III routes, and hundreds of miles of striped shoulder that are legal for bicycle use, including the full length of US 395. The striped shoulders of US 395, US 6, and SR 168 are used by bicyclists for utility trips near Bishop and also for touring and day rides. Two Class I bike paths are located within Bishop that are relatively short: the Sierra Street Path that extends between Sierra Street and US 395, and the path along South Barlow Lane. A Class I bike path also occurs along SR 190 at Furnace Creek that connects the Death Valley National Park headquarters to Borax Mill Road.

The County also has approximately 2,500 miles of unpaved rural roads and trails used by mountain bikers, including abandoned railroad ROW and roads maintained by the Inyo National Forest, NPS, BLM, SCE, and LADWP.

4.17.1.4 Regulatory Framework

Federal Regulations

<u>Code of Federal Regulations</u>

CFR Title 49, Subtitle B, provides guidelines pertaining to interstate and intrastate transport of goods and hazardous materials and substances, as well as safety measures for motor carriers and motor vehicles that operate of public highways. Within Inyo County, there are several public highways that provide access the SEDAs and the OVSA and would be utilized in conjunction with solar energy projects within the SEDAs. The primary transportation corridor within the County is US 395; most of the County's population is located along this highway and four SEDAs and the OVSA are located along US 395.

CFR Title 23, Part 658 prescribes national policies that govern truck sizes and weights on the national network of highways based on the Surface Transportation Assistance Act. The maximum length of a semitrailer operating in a truck tractor-semitrailer combination is 48 feet. The maximum length of a semitrailer or trailer operating in a truck tractor, semitrailer-trailer combination, is 28 feet. The maximum width of vehicles operating on the national network is 102 inches (except for mobile home transport, which requires a special permit). The maximum gross vehicle weight is 80,000 pounds.

Additionally, CFR Title 14, Part 77 requires notification to the FAA for construction of structures: (1) with a height greater than 200 feet above grade; or, (2) greater than an imaginary surface extending outward and upward at a slopes of 100 to 1 for a horizontal distance of 20,000 feet from the nearest airport runway, 50 to 1 for a horizontal distance of 10,000 feet from the nearest airport runway, or 25 to 1 for a horizontal distance of 5,000 feet from the nearest airport runway. This CFR section applies due to the proximity of SEDAs to airports and military air installations within the County (refer to Figure 4.8-1).

State Regulations

California Department of Transportation

Caltrans manages California's highway system and is responsible for planning, designing, constructing, operating, and maintaining highways. For administrative purposes, Caltrans divides the state into 12 districts, supervised by district offices. Inyo County is located within District 9 which is headquartered in Bishop.

Caltrans requires an encroachment permit for non-transportation activities, including utility construction, occurring within ROWs of the state highway system. Caltrans also requires transportation permits for the movement of vehicles or loads exceeding the size and weight limitations of the California Vehicle Code.

California Streets and Highways Code

The California Streets and Highways Code contains regulations for the care and protection of state and County highways and specifies that permits issued by Caltrans be required for roadway encroachment during truck transportation and delivery, as well as loads that exceed Caltrans' weight, length, or width standards for public roadways. The code also requires permits for utilities constructed within the right-of-way of a public highway.

California Vehicle Code

The California Vehicle Code contains several regulations regarding the safe transport of hazardous materials, hazardous waste, and explosive materials. It also provides weight guidelines and excessive load restrictions for vehicles traveling on highways.

Local Regulations

Inyo County Regional Transportation Plan

The Inyo County Regional Transportation Plan, adopted in 2009 by the Inyo County Local Transportation Commission, serves as the planning blueprint to guide transportation investments in the County involving local, state, and federal funding through the year 2030. Applicable goals and policies contained in the plan include the following:

- Goal 2: A transportation system that is safe, efficient and comfortable which meets the needs of people and goods and enhances the lifestyle of the County's residents.

- Policy 2.2.1: Proper access. Provide proper access to residential, commercial, and industrial areas.

- Goal 3: Maintain adequate capacity on SRs and Local Routes in and surrounding Inyo County and the City of Bishop.

- Policy 3.3.1: Support roadway improvements to optimize public safety. Improve County roads through specific safety improvements and maintenance.

Inyo County General Plan

The Circulation Element of the General Plan (2001, as amended) addresses the movement of people and goods through a variety of transportation facilities, from roads to railroads, bicycle paths to transmission corridors. The Circulation Element presents goals and policies for roadways and highways; scenic highways; public transportation; bicycles and trails; railroads; aviation; canals, pipelines and transmission cables; parking and information technology/telecommuting. Applicable goals and policies include the following:

- Goal RH-1: A transportation system that is safe, efficient and comfortable which meets the needs of people and goods and enhances the lifestyle of the County's residents.

- Policy RH-1.4: Level of Service. Maintain a minimum of LOS C on all roadways in the County of Inyo. For highways within the County of Inyo, LOS C should be maintained except where roadways expansion or reconfigurations will adversely impact the small community character and economic viability of designated Central Business Districts.

- Policy RH-1.5: Proper Access. Provide proper access to residential, commercial, and industrial areas.

4.17.2 Significance Thresholds

The following impact analysis is based on the following State CEQA Guidelines Appendix G thresholds of significance, which indicate that a project would have a significant impact if it would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

- Result in a change of air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

- Result in inadequate emergency access.

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.17.3 Impact Analysis

The REGPA is designed to minimize impacts to transportation opportunities and facilities in the County by constraining renewable energy development in the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact transportation resources.

Except where noted, the following impact analysis primarily focuses on utility scale solar energy facilities because those would likely result in the greatest increase in traffic associated with construction and operation due the potential size of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities. However, due to their small size (e.g., small array of ground- or roof-mounted PV panels), and location (on the building or the property it serves), these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to transportation and circulation against the program-level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the traffic impact analysis conducted for the project.

4.17.3.1 Transportation Activities

Implementation of solar energy development would require a variety of transportation activities over the life of a project. Most of these transportation activities would involve the movement of workers, materials, and equipment to the specific solar energy development project site during the construction phase. The types and amounts of materials and equipment would depend on the solar energy technology type as well as site-specific characteristics. Ongoing operations and maintenance of solar energy project would require worker commutes and deliveries of supplies. The following discussion provides a general overview of expected transportation requirements during construction and ongoing operation and maintenance of solar energy developments.

Construction

Construction activities for utility-size solar facilities are expected to occur over a period of one or more years depending on the size and type of the project, with anticipated peak construction period daily workforces of 1,000 or more. The types of heavy construction equipment would include bulldozers, excavators, scrapers, front-end loaders, trucks, cranes, rock drills, chain saws, chippers, and trenching machines. Typically, the equipment would be moved to the site by flatbed combination trucks and would remain on-site through the duration of construction activities. Typical construction materials hauled to the site would include gravel, sand, water, and ready-mix concrete. Concrete batch plants may also be set up on-site. Peak truck deliveries of materials and supplies, including solar array components, might be expected to be on the order of 50 trucks per day. Construction wastes would be hauled off from the solar energy project site.

Once the foundations are constructed, construction of the different types of solar projects would be similar with respect to transportation needs. Solar collectors would be assembled on-site, and materials would be delivered to the solar energy project site by regular truck shipments without the need for oversize or overweight permits. The total number of shipments over the course of the construction period would be dependent on the type of solar technology and the size of the facility. Oversize exceptions would include the delivery of steam turbine generators and main transformers. Such equipment is typically transported to the solar energy project site via specially designed tractor trailers. These deliveries may require multiple days, escorts, and transport during off-peak hours.

Operations and Maintenance

Operations of solar energy projects would require varying numbers of on-site personnel, depending on the technology and capacity of the facility. Small PV facilities might require only one on-site worker daily to monitor controls and inspect equipment or might be monitored remotely without the need for any on-site workers. Larger solar energy projects, such as power towers would require an operations workforce of up to 100 or more.

Maintenance requirements would also vary by technology type and capacity of the facility. A common maintenance requirement for both PV and solar thermal technologies would be panel/reflector/mirror washing. Some technologies require frequent washing to maintain energy conversion efficiency (e.g., parabolic trough), whereas others may require very infrequent washing (e.g., PV systems). Additional maintenance activities are required for solar thermal systems such as preventative maintenance on steam turbine generators, which would require additional personnel that travel to and from the specific project site via trucks.

4.17.3.2 Construction Impacts

Construction of solar energy projects would result in temporary increases in traffic trips on local roads and highways in the vicinity of a proposed solar energy project site. Construction-related traffic would include worker vehicles and trucks delivering materials and supplies to the specific solar energy project site.

The location of solar energy projects can cause direct impacts on the local roadway network. The proximity of a solar energy project site to major roads contributes to potential traffic congestion from construction traffic. Some areas within the SEDAs are located in remote areas that are served by only one major road (e.g., a state highway) providing access from two directions, while other locations may have multiple access routes. Limited access can result more severe traffic impacts particularly if delays occur due to road maintenance or construction, higher vehicle volumes, traffic accidents, or inclement weather.

The location of the solar energy project site with respect to the electrical grid determines where the electrical transmission line from the site would connect to the grid and the route and length of the transmission line. The construction and operation of the electrical utility connection lines would not be expected to result in any significant transportation impacts, but the addition of construction workers associated with them could increase the severity of traffic impacts when combined with the construction traffic generated by a specific solar energy project.

Construction equipment and materials required for site access, site preparation, and solar array footing or foundation construction do not pose unique transportation considerations. Local road improvements could be necessary if access routes are not built to support heavy truck traffic up to the federal limit of 80,000 pounds gross vehicle weight. In addition, a small number of one-time oversized and/or overweight shipments may be required for large construction equipment typically required for site preparation and large solar components such as steam turbine generators and main transformers.

Overweight and/or oversized loads can be expected to cause temporary disruptions on the roads used to access a solar energy project site. Moreover, the solar energy facility access road must be constructed to accommodate such shipments. Overweight and oversized loads typically require tractor-trailer combinations with multiple axles, special permits, advance and trailing warning vehicles, and possible police escorts. Travel during off-peak hours and/or temporary road closures may also be necessary. Most of the construction equipment would remain at the site for the duration of the construction period. Because such construction equipment is routinely moved on US roads and there will be only a limited number of one-time shipments, no significant impact is expected from these movements to and from the construction site.

Transport of other equipment and materials to the site during construction would cause a small increase in the LOS of local roadways during the construction period. Shipments of materials, such as gravel, concrete, water, and solar components, would not be expected to significantly affect local roadways. For larger projects, the average number of deliveries could be around 30 per day and as much as 85 per day during peak construction periods. Deliveries would likely occur during the morning hours and could add about 20 vehicles per hour to traffic volumes on local roadways during peak construction periods. Such an increase would not be at a magnitude to degrade the LOS of a roadway; however, the culmination of these trips could degrade County roads.

Significant traffic impacts could result from workers commuting to the solar energy project site for larger projects. Peak construction workforces for solar energy projects have been estimated to range from about 100 to 1,400 daily workers, with averages from about 100 to 400 or more workers over construction periods ranging from 2 to 4 years. If each worker drives to the solar energy project site during peak construction periods, 700 or more additional vehicles per hour (1,400 workers arriving on-site between 7:00 a.m. and 9:00 a.m.) could degrade the LOS of a local roadway or highway, resulting in a potentially significant impact.

4.17.3.3 Operational Impacts

Transportation activities during operation of solar energy projects would involve commuting workers, material shipments to and from the facility, and on-site work and travel. Operations crews may number more than 150 for larger solar energy projects, but are anticipated to number 10 to 50 workers during daytime hours, with a minimal crew of a few personnel during the nighttime in most cases. A few daily truck shipments to or from a site also would occur. Shipments from facilities would also include wastes for disposal.

Accordingly, transportation activities during operations would be limited to a small number of daily trips by personal vehicles and a few truck shipments. Given the small number of traffic trips generated by operations of solar energy projects, the associated negligible increase in trips on local roadway and highways would not adversely impact the local transportation system or otherwise degrade LOS operations. Operational traffic impacts would be less than significant.

4.17.3.4 Aviation Impacts

Some SEDAs and the OVSA are located in close proximity to airports (refer to Figure 4.8-1). Specifically, the Laws SEDA is located approximately one mile from the Bishop Airport, the OVSA contains three airports within its boundaries (Bishop, Independence, and Lone Pine), the Trona SEDA contains the Trona Airport within its boundaries, the Charleston View SEDA is located approximately 1.1 miles from Hidden Hills Airport (private), and the Sandy Valley SEDA is located approximately 0.9 mile from the Sky Ranch Airport (private). Implementation of solar energy projects within these SEDAs and the OVSA could potentially result in air traffic hazards related to placement of structures such as towers and solar arrays, depending on their nature and location. Certain solar components and utility infrastructure consist of tall vertical structures; power towers can reach heights of more than 700 feet and electrical transmission towers can reach heights of about 125 feet. In addition, construction equipment, such as cranes of more than 100 feet in height could be utilized during construction activities. When located near airports, these structures and equipment can pose low-altitude flight hazards to aircraft and could affect air traffic patterns, especially within airport runway approach flight patterns, low-altitude flight corridors, and within military exercise areas. Pursuant to CFR, Title 14, Part 77, notification to the FAA is required for proposed structures over 200 in height regardless of the distance from an airport. These regulations establish standards for determining obstructions in navigational airspace.

Additionally, solar energy components can produce glare effects from solar collectors and other potentially reflective surfaces. The magnitude of glare effects would depend on the type and size of the solar energy project, but given that projects could encompass several thousand acres, there is potential for glare to be directed upward affecting the vision of aircraft pilots. As a result, associated air traffic impacts would be potentially significant.

4.17.3.5 Traffic Hazards Due to Design

Potential road hazards can occur due to a design feature or physical configuration of existing or proposed access roads that can affect the safe movement of vehicles along a roadway. Solar energy projects within any of the SEDAs or OVSA would require construction of access roads that would intersect with existing local roadways. These access roads would be designed in compliance with County private roadway standards to allow safe passage of construction vehicles, including oversized trucks, and would provide safe adequate sight distances from project driveways and intersections. Adequate sight distance would be verified by completion of a project-specific sight distance analysis. Additionally, solar energy projects would not likely include curves, slopes, walls, landscaping, or other barriers that would create potential conflicts between vehicles accessing the solar energy project site.

Glare can be generated from solar components at varying intensities, depending on the size, design, and orientation of the solar energy project. Glare effects could occur along roadways in the vicinity of solar energy project sites. Because the precise locations and nature of solar energy projects within any of the SEDAS and the OVSA are not known, such effects could be substantial in that the intensity of reflected sunlight could interfere with motorists' vision on roadways. As a result, associated traffic hazard impacts could be potentially significant.

4.17.3.6 Emergency Access

The primary emergency evacuation routes in the vicinity of the SEDAs and the OVSA include the highways that traverse the County, including US 395, US 6, SR 127, SR 136, SR 168, SR 178, and SR 190. One or more of these roadways would likely be utilized during construction and operation of solar energy projects for routine vehicle activities such as employee access, material/equipment deliveries, and maintenance. Traffic control measures, such as the use of flaggers and guide vehicles, may be required at specific times to facilitate construction vehicle ingress and egress from the specific solar energy project site to local roads and highways. On-site access roads would also be provided within specific solar energy project sites to allow for sufficient emergency vehicle access. A traffic control plan would be prepared and would include measures to avoid disruptions or delays in access for emergency vehicles and to notify emergency service providers of any road or traffic conditions that may impede emergency access. Associated potential impacts related to emergency access would be less than significant.

4.17.3.7 Policy Consistency with Alternative Transportation Modes

Because the County is rural and contains substantial areas of wilderness, there are limited facilities within the County that support other modes of transportation. Automobiles comprise the principal travel mode within the County. Bus transit services are provided for the larger communities along the US 395 corridor. Bikeways are also provided within the more populated communities. While the General Plan and the Inyo County Collaborative Bikeways Plan contain goals and policies that support expansion of public transit and non-motorized transportation modes, implementation of the proposed project would not conflict with those goals and policies, nor would it preclude implementation of planned future transportation improvements. Most of the SEDAs are located in rural and, in some cases, mostly undeveloped areas where transit, bicycle, and pedestrian facilities are not available and for the most part, are not planned. Even if transit service or bicycle/pedestrian facilities would be located in the vicinity of a solar energy project site, solar developments would not be located within roadway ROWs and are typically set back from roadways and fenced and, therefore, would not compromise the safety of transit service or bicycle/pedestrian facilities. No significant impacts would occur.

4.17.4 Level of Significance before Mitigation

Based on the analyses in Section 4.17.3, future utility scale projects under the REGPA could result in potentially significant impacts related to: (1) construction traffic; (2) air traffic safety hazards; and, (3) design-related traffic hazards. These impacts require mitigation to reduce them to the maximum extent feasible.

Due to their smaller size and location, distributed generation and community scale facilities would generally be expected to result in less severe impacts related to hazards and hazardous materials when compared with utility scale facilities; however, the severity of the impact would ultimately depend on the relation of the project to the issues described above. Small scale projects are typically considered to result in no impacts under CEQA.

4.17.5 Mitigation Measures

Transportation and circulation mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for off-site use (utility scale) and would be implemented to mitigate adverse impacts to transportation and circulation. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on transportation and circulation and would not require a project-specific traffic impact analysis or implementation of the mitigation measures listed in this section. In such cases, the County shall document that no impacts to transportation and circulation will occur and no mitigation measures are necessary in lieu of the traffic impact analysis required in Mitigation Measure TRA-2.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact transportation and circulation, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Section 4.17.3 and 4.17.4, implementation of solar energy projects would result in potentially significant impacts related to construction traffic, air traffic safety hazards, and design-related traffic hazards. Mitigation for air traffic safety hazards is identified in Section 4.8.5 (Mitigation Measure HAZ-2) and entails completion of a site-specific Airport Safety Investigation to evaluate potential impacts and identify and implement associated remedial recommendations. Mitigation for design related traffic hazards associated with glare is identified in Section 4.1.5 (Mitigation Measure AES-1) and entails preparation of site specific glare studies to assess potential glare impacts and identify and implement associated remedial recommendations. In addition to Mitigation Measures AES–2 and HAZ–2, the following mitigation measures are identified to address the issues of construction traffic for utility scale solar projects, and include applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). Implementation of these measures would avoid or reduce identified transportation and circulation impacts to below a level of significance.

MM TRA-1: Prepare site-specific traffic control plans for utility scale projects.

Site-specific traffic control plans shall be prepared for all proposed solar energy projects within the individual SEDAs and the OVSA to ensure safe and efficient traffic flow in the area of the solar energy project and within the project site during construction activities. The traffic control plan shall, at minimum, contain project specific measures to be implemented during construction including measures that address: (1) noticing; (2) signage; (3) temporary road or lane closures; (4) oversized deliveries; (5) construction times; and (6) emergency vehicle access.

MM TRA-2: Implement recommendations from traffic impact analysis on surrounding roadways and intersections.

Site-specific construction traffic impact analyses shall be prepared for all proposed utility scale solar energy projects within the individual SEDAs and the OVSA to evaluate potential traffic impacts on surrounding roadways and intersections during the construction period, including wear and tear on County roads. Applicable results and recommendations from the project-specific construction traffic impact analysis shall be implemented during the appropriate construction phase to address identified potential construction traffic impacts.

4.17.6 Significant Unavoidable Adverse Impacts

Based on the implementation of the mitigation described in Section 4.17.5, identified traffic impacts would be avoided or reduced to below a level of significance, with no significant unavoidable adverse impacts.

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4.18 UTILITIES AND SERVICE SYSTEMS

4.18.1 Existing Conditions

4.18.1.1 Water

The Inyo County Environmental Health Services (ICEH) regulates 105 active public and state small drinking water systems located throughout the County (ICEH 2014). These 105 systems include: 31 community systems with between 25 and 199 residential service connections or 25 or more yearlong residents; 11 non-transient, non-community systems such as schools, institutions, and places of employment; 47 transient, non-community systems such as restaurants, campgrounds, and resorts; and 16 state small systems that serve between 5 and 14 residential service connections but less than 25 yearlong residents. There are also at least nine other larger water systems throughout the County that are regulated by the State of California. Table 4.18-1 summarizes the existing water and wastewater services in the SEDAs. Due to the SEDAs locations in undeveloped portions of the County, most of the water services that exist in the SEDAs consist of individual wells; however, the majority of the lands within the SEDAs do not have existing water service.

Table 4.18-1
EXISTING WATER AND WASTEWATER SERVICE IN THE SEDAS AND THE OWENS VALLEY STUDY AREA

Community	Water Service	Wastewater Service
Laws SEDA		
Laws	Community water system	Individual septic systems
Owens Lake SEDA		
Keeler	Community water system serves the developed portion of Keeler	Individual septic systems
Rose Valley SEDA		
Dunmovin	Individual wells	Individual septic systems
Haiwee	Individual wells	Individual septic systems
Pearsonville SEDA		
Pearsonville/Sterling Road	Individual wells	Individual septic systems
Owens Valley Study Area		
Lone Pine	Provided by community systems	Provided by community systems
Independence	Community water system operated by Inyo County	Sewer system operated by the LADWP
Big Pine	Served by water systems	Served by sewer systems
Bishop	Provided by the City of Bishop	Provided by the City of Bishop
Wilkerson	Provided by public and private community water systems for the newer developments and individual wells and/or artesian wells or springs in the older tracts	Individual septic systems
Aberdeen	Private community water system	Individual septic systems
Keough Hot Springs	Private community well	Mix of community and individual septic systems

Table 4.18-1 (cont.)
EXISTING WATER AND WASTEWATER SERVICE IN THE SEDAS AND THE OWENS VALLEY STUDY AREA

Community	Water Service	Wastewater Service
Trona SEDA		
Valley Wells	Domestic water for the area is piped from Indian Wells Valley and elsewhere	Septic systems
Chicago Valley SEDA		
Chicago Valley	Individual wells	Individual septic systems
Charleston View SEDA		
Charleston View	Individual wells	Individual septic systems
Sandy Valley SEDA		
Sandy Valley	Individual wells	Individual septic systems

Source: Inyo County 2001, as amended

4.18.1.2 Wastewater

There are many wastewater service providers in the County, ranging from wastewater treatment facilities in some of the primary population centers of the County (i.e., Bishop, Lone Pine, and Independence) to individual septic systems in the less populate areas of the County. As shown in Table 4.18-1, wastewater services within the SEDAs primarily consist of individual septic systems, although some community septic systems are present. The OVSA, which contains much of the population centers of the County, has communities serviced by sewer systems. The majority of lands within the SEDAs are undeveloped and do not contain wastewater infrastructure.

4.18.1.3 Solid Waste

The Inyo County Waste Integrated Waste Management Department (ICIWMD) provides management of liquid and solid wastes in the County. The ICIWMD is responsible for the operation of five landfills, four transfer stations, and four bin transfer sites in the County (ICIWMD 2014). The County landfills and some of the landfill characteristics are also summarized in Table 4.18-2. Solid waste can also be disposed at one of the four transfer stations operated by the ICIWMD. These stations are located in Big Pine, Keeler, Homewood Canyon, and Olancha.

Table 4.18-2
INYO COUNTY LANDFILLS

Landfill	Maximum Daily Throughput (tons/day)	Remaining Capacity (cubic yards)	Estimated Cease Operation Year	Waste Types Accepted
Lone Pine Landfill Substation Road Lone Pine, CA	22	1,002,586	2065	Industrial, mixed municipal, agricultural, construction/ demolition, dead animals, ash
Independence Landfill Dump Road Independence, CA	10	126,513	2038	Agricultural, ash, industrial, mixed municipal, tires, dead animals, construction/demolition
Bishop Sunland Solid Waste Site 110 Sunland Reservation Road Bishop, CA 93514	120	3,314,752	2097	Industrial, mixed municipal, agricultural, construction/demolition, other designated, asbestos, contaminated soil, dead animals, sludge (biosolids), ash
Shoshone Landfill* 1 mile east of Shoshone Shoshone, CA	1	8,038	2052	Mixed municipal, construction/demolition, dead animals, green materials
Tecopa Landfill* 1 mile east of Tecopa Tecopa, CA	1	37,048	2150	Mixed municipal, construction/demolition, dead animals, green materials

Sources: ICIWMD 2014; California Department of Resources Recycling and Recovery (CalRecycle) 2014.
*The Shosone and Tecopa Landfills are not open to the public.

4.18.1.4 Electricity

Electricity within the County is provided by two service providers: LAWDP and SCE. The LADWP has a 500kV transmission line which traverses the Owens Valley corridor. SCE also has a 115kV transmission line traversing the Owens Valley corridor, which is part of its North of Lugo service area. It serves San Bernardino, Kern, Inyo, and Mono counties and has ties into LADWP lines (Inyo County 2013). The Western Solar Energy Group (Laws, Owens Lake, Rose Valley, and Pearsonville SEDAs) is located along the LADWP transmission line through Owens Valley. The Southern Solar Energy Group (Trona SEDA) and the Eastern Solar Energy Group (Chicago Valley, Charleston View, and Sandy Valley SEDAs) are located in areas with no existing transmission lines, except for distribution lines for local residences.

4.18.1.5 Regulatory Framework

State Regulations

<u>California State Water Resources Control Board</u>

The State Water Resources Control Board and nine RWQCBs are responsible for implementing the CWA and the Porter Cologne Water Quality Control Act. The Porter Cologne Water Quality

Control Act Section 13000 directs each RWQCB to develop a Water Quality Control Plan (Basin Plan) for all areas within its region. The Basin Plan is the basis for each RWQCBs regulatory programs. The County is located within the purview of the Lahontan RWQCB, and must comply with applicable elements of the region's Basin Plan, as well as the Porter Cologne Water Quality Control Act (refer to Section 4.9 for a more detailed discussion of the RWQCBs applicable standards and requirements).

<u>California Integrated Waste Management Act</u>

The California Integrated Waste Management Act of 1989 (Assembly Bill 939) was adopted to redefine waste management practices and to minimize the volume and toxicity of solid waste that is disposed at landfill facilities in the state. Assembly Bill 939 requires that each local jurisdiction prepare a Source Reduction and Recycling Element to show reduction in the amount of solid waste being disposed to landfills, with diversion objectives of 50 percent by the year 2000.

Local Regulations

<u>Inyo County Code Title 7: Construction and Debris Ordinance</u>

ICC Title 7, Chapter 7.11 contains the County's construction and debris ordinance. Compliance with this ordinance is required for all construction, demolition, and renovation projects within the County for which a building permit is required, and which exceeds 18 cubic yards per day of generated construction and demolition debris. ICIWMD would visit project sites that meet the criteria identified above and discuss plans for managing construction and demolition debris, including best management methods to dispose of or recycle debris. ICIWMD would also advise project applicants about the peak daily limits at local landfills and encourage the project applicants to schedule deliveries of construction and demolition debris. This ordinance requires diversion of all materials from the solid waste stream that can be reasonably diverted for alternative use.

<u>Inyo County General Plan</u>

Following are relevant goals and policies from the General Plan (2001, as amended).

Land Use Element

- Policy LU-1.16: Impacts of New Development on Infrastructure Improvements, Public Facilities, and Services. The impacts of discretionary projects shall be assessed as required by the California Environmental Quality Act and appropriate, feasible, mitigation will be required at the time such projects are approved and as provided by law. Mitigation required for such projects may include the collection of fees to offset impacts to infrastructure, public facilities, and services.

- Policy LU-1.20: Disadvantaged Unincorporated Communities ("Legacy Communities"). Legacy communities are defined as communities in which the median household income is 80 percent or less than the statewide median household income, are geographically isolated, are inhabited, and have existed for at least 50 years. In Inyo County, the following communities have been identified as Legacy Communities: Charleston View; Darwin; Furnace Creek; Keeler; Lone Pine; Shoshone; Tecopa; Trona; Wilkerson. The County will continue to encourage upgrades to water, wastewater, stormwater drainage, and structural fire protection in these communities, as appropriate.

- Goal PSU-3: To ensure that there will be a safe and reliable water supply sufficient to meet the future needs of the County.
- Goal PSU-4: To ensure adequate wastewater collection, treatment, and disposal.
- Policy PSU-4.4: Permitting Individual On-Site Systems. The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be feasibly provided.
- Goal PSU-5: To collect and dispose of stormwater in a matter that minimizes inconvenience to the public, minimizes potential water-related damage, and enhances the environment.
- Policy PSU-5.1: Project Design. The County shall encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
- Policy PSU-5.2: Maintenance. The County shall require the maintenance of all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
- Policy PSU-5.3: Natural Systems. The County shall encourage the use of natural stormwater drainage systems in a manner that preserves and enhances natural features.
- Policy PSU-5.4: Runoff Quality. The County shall improve the quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices.
- Policy PSU-5.5: Drainage Disposal. New development shall have surface drainage disposal accommodated in one of the following ways:
  - Positive drainage – positive drainage to a County-approved storm drain or retention/detention facility.
  - On-site drainage – drainage retained on-site within the development. [New]
  - Drainage directly to a natural system (i.e., stream, creek) is discouraged and is subject to the Lahontan Regional Water Quality Control Board (LRWQCB) and California Department of Fish and Game [Wildlife] provisions.

- Policy PSU-5.6: Drainage System Requirements. Future drainage system requirements shall comply with applicable state and federal non-point source pollutant discharge requirements.

- Goal PSU-6: To ensure the safe and efficient disposal or recycling of solid waste generated in Inyo County.

- Policy PSU-6.1: Solid Waste Reduction and Recycling. The County shall promote maximum use of solid waste reduction, recycling, composting, and environmentally safe transformation of wastes.

- Policy PSU-6.3: Recycled Products. The County shall encourage businesses to use recycled products in their manufacturing processes and consumers to buy recycled products. The County shall use recycled products or products containing recycled materials when possible.

- Goal WR-1: To provide an adequate and high quality water supply to all users within the County.

- Policy WR-1.1: Water Provisions. The County shall review development proposals to ensure adequate water is available to accommodate projected growth.

- Policy WR-1.3: Water Reclamation. Encourage the use of reclaimed wastewater, where feasible, to augment groundwater supplies and to conserve potable water for domestic purposes.

- Policy WR-1.4: Regulatory Compliance. Continue the review of development proposals and existing uses pursuant to the requirements of the Clean Water Act, LRWQCB, and local ordinances to reduce polluted runoff from entering surface waters.

- Goal PSU-10: To provide efficient and cost-effective utilities that serves the existing and future needs of people in the unincorporated areas of the County.

- Policy PSU-10.1: Expansion of Services. The County shall work with local electric utility companies to design and locate appropriate expansion of electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

- Policy PSU-10.2: Improvements. The County shall promote technological improvements and upgrading of utility services in Inyo County.

- Policy PSU-10.3: Provision of Services. The County shall encourage the provision of adequate gas and electric service and facilities to serve existing and future needs.

Circulation Element

- Goal CPT-1: To ensure that regional conveyance systems are designed and located to serve Inyo County residents while not significantly impacting existing communities or regional viewsheds.

- Policy CPT-1.1: Placement of Corridors. The County shall consider the visual and environmental impacts associated with placement of regional conveyance corridors.

Government Element

- Policy Gov-10.1: Development. Development of energy resources on both public and private lands be encouraged with the policies of the County to develop these energy resources within the bounds of economic reason and sound environmental health. Therefore, the Board supports the following policies.

  a. The sound development of any and all energy resources, including, but not limited to geothermal, wind, biomass, and solar.

  b. The use of peer-reviewed science in the assessment of impacts related to energy resource development.

  c. The development of adequate utility corridors necessary for the transmission of newly generated energy.

  d. Maintain energy opportunities on state and federal lands maintaining and expanding access.

  e. Treat renewable energy sources as natural resources, subject to County planning and environmental jurisdiction. Consider, account for, and mitigate ecological, cultural, economic, and social impacts, as well as benefits, from development of renewable energy resources. Consider developing environmental and zoning permitting processes to ensure efficient permitting of renewable energy projects while mitigating negative impacts to county services and citizens, with a goal to ensuring that citizens of the County benefit from renewable energy development in the County.

4.18.2 Significance Thresholds

The County utilizes State CEQA Guidelines Appendix G for criteria to determine significant impacts. Accordingly, the project would result in a significant or potentially significant impact if it would:

- Exceed wastewater treatment requirements of the applicable RWQCB;

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- Require, or result in, the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves, or may serve, the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or,
- Comply with federal, state, and local statutes and regulations related to solid waste.

4.18.3 Impact Analysis

The REGPA is designed to minimize impacts to utilities and service systems in the County by constraining renewable energy development throughout the County in conjunction with the General Plan's existing protection for such resources. Indirectly, individual future projects have the potential to impact utilities and service systems.

Except where noted, the following impact analysis primarily focuses on utility scale solar energy facilities because those would likely result in the greatest change to the physical environment due the potential size of such facilities; however, the analysis also applies to the other proposed categories of solar energy facilities, including distributed generation and community scale facilities.

The proposed REGPA also includes provisions for development of small scale solar energy facilities Porter-Cologne these developments are currently allowed throughout the County within any zoning district under ICC Title 18, and require only electrical and building permits for development. As a result, these developments are not considered to result in impacts under CEQA, and would not typically require the CEQA analysis or associated mitigation measures described in this document.

The County routinely reviews all development proposals for environmental impacts. Therefore, all future solar energy projects would be evaluated on a project-specific basis to assess specific impacts to utilities and service systems against the program level analysis contained in this PEIR. Applicable mitigation measures identified in this PEIR would be implemented for the individual project, as well as any additional mitigation or design measures identified in the utilities and service systems analysis conducted for the project.

4.18.3.1 Wastewater Treatment Requirements and Wastewater Capacity

The County is located within the jurisdiction of the Lahontan RWQCB. Due to the remote locations of the SEDAs, wastewater infrastructure in each SEDA is generally limited to community or individual septic systems. For future solar development projects within the

SEDA, wastewater generation may vary, depending on the type of technology used and the development size. It is expected that future solar development projects would be served by onsite wastewater treatment and would not connect to existing systems. The RWQCB is responsible for review and approval of onsite wastewater treatment systems. Future solar development projects within the SEDAs would be required to comply with the requirements of the RWQCB, as well as the County's land use entitlement and CEQA process to ensure adequate wastewater service for the site, in compliance with the RWQCB's discharge requirements. Compliance with these requirements and standards would ensure impacts associated with wastewater treatment requirements and wastewater capacity would remain less than significant.

4.18.3.2 New or Expanded Water or Wastewater Treatment Facilities

Water usage and wastewater generation would vary at different future solar energy projects, dependant on a variety of factors including the size and type of development proposed. Solar PV technology requires minimal water usage during long term operation of the site, with an estimated consumption of approximately 5 gallons of water per MW hour. Solar thermal technology requires water consumption for cooling, with an estimated water usage of approximately 800 to 1,000 gallons per MW hour. The use of dry-cooling or hybrid wet-dry cooling can reduce water consumption by up to 97 percent, based on system design and location. The proposed REGPA contains the following proposed water resources policy:

- Policy WR-3.5: Sustainable Renewable Energy Solar Development. The County shall require Renewable Energy Solar Facility development to incorporate measures to minimize water consumption and use of potable water and encourage the use of reclaimed water and/or practices that do not require water during construction, the life of the facility, and during reclamation.

Future solar development projects within the SEDAs would be required to comply with the applicable requirements of the RWQCB, County policies, and the County's land use entitlement and CEQA process. Project specific analysis of water usage and wastewater generation would be required as part of the land entitlement process and applicants would be required to identify viable sources of water supply to meet a project's construction and operational needs. Compliance with these requirements and standards would ensure impacts associated with water usage and wastewater generation, and a need for new or expanded facilities, would remain less than significant.

4.18.3.3 Stormwater Drainage Facilities

The undeveloped portions of the SEDAs do not contain stormwater drainage facilities. Future solar development projects could create new impervious surfaces in the SEDAs, resulting in changes to the natural drainage of the SEDAs. Future solar development projects in the SEDAs would be required to install applicable stormwater drainage facilities that are adequately sized to handle flows. The need for such facilities, and the appropriate siting and sizing of such facilities would be analyzed on a project specific basis as part of the normal land use and entitlement process for individual projects, including the CEQA process. The completion of the land use entitlement and CEQA process for future projects would ensure adequate stormwater protection for individual sites would occur and impacts would remain less than significant.

4.18.3.4 Solid Waste Disposal

Future solar development projects within the SEDAs are not expected to generate substantial waste. If future solar development projects occur on vacant land within the SEDAs, no demolition debris would be generated; however, if future solar development projects occur within portions of the SEDAs containing structures and structure removal is required, there would be some demolition debris which would require removal and deposition in a solid waste landfill or recycling. Each of the SEDAs contains large areas of vacant land, and significant structure removal is not anticipated for future solar development projects. During project construction, waste generated is expected to be minimal and could include waste associated with the presence of workers onsite (lunchtime trash, paper towels, etc.) and packaging for project materials. Similarly, long term solid waste generation at future solar development project sites is expected to be minimal, and could consist of waste generated by small numbers of workers that could be present during the long-term operation of the site, as well as broken or old equipment that has been replaced and packaging material for items used in facility maintenance. Solid waste generated at individual future project sites, and generated during decommissioning of individual future project sites, would be transferred to nearby landfills for recycling and/or disposal. The Western Solar Energy Group (Laws, Owen Lake, Rose Valley, and Pearsonville SEDAs) would have access to the Lone Pine and Independence Landfills and Bishop Sunland Solid Waste site due to the proximity of the SEDAs and the solid waste disposal centers along the US 395 corridor. Collection of solid waste generated in the Southern and Eastern Solar Energy Groups would also be transported to Pahrump Nevada or Ridgecrest in Kern County.

Given the low solid waste generation expected for future solar development projects, the requirement for project's compliance with the City's construction and debris ordinance, and the remaining capacities of the existing County landfills identified in Table 4.18-2, impacts associated with adequate landfill for future solar development projects would be less than significant, provided compliance with ICC Title 21 and the REGPA policies.

All solid waste generated by future solar development projects would be handled and disposed of in accordance with applicable federal, state, and local requirements, and consistent with REAT's Best Management Practices and Guidance Manual (REAT 2010) . No impact regarding compliance with such standards would occur.

4.18.3.5 Energy Use

Western Solar Energy Group

The Western Solar Energy Group is located along the LADWP Owens Valley transmission corridor, so future solar development projects occurring within the Laws, Owens Lake, Rose Valley, and Pearsonville SEDAs would be reliant on the capacity of these existing facilities. According to LADWP, its transmission line has approximately 250 MW of available capacity. The combined energy generation cap of the SEDAs exceeds 250 MW, and if solar facilities are developed in the OVSA, they would also be reliant on the same transmission facilities as the western SEDAs. To avoid upgrades to the existing LADWP facilities, the total development in the Western Solar Energy Group cannot exceed the line's capacity. Any combination of development in the Western Solar Energy Group cannot exceed 250 MW generation and

1,500 acres of development. Although allowable development within the OVSA would be determined through future planning efforts, the 250 MW generation and 1,500 acre development cap for the Western Solar Energy Group includes the OVSA. An exceedance of the 250 MW generation cap would require additional transmission capacity, resulting in a potentially significant impact.

Southern Solar Energy Group

The Southern Solar Energy Group (consisting of the Trona SEDA) has a 100 MW energy generation cap. Exporting 100 MW from the Trona SEDA would require a new transmission line because there are no existing transmission lines in this area of the County. This new line could parallel the existing SCE distribution line and would most likely be built at 115 kV to interconnect with the existing SCE 115 kV line that runs along the US 395 corridor. The need for a new transmission line to serve future solar development projects in the Southern Solar Energy Group is a potentially significant impact.

Eastern Solar Energy Group

The Eastern Solar Energy Group (consisting of Chicago Valley, Charleston View, and Sandy Valley SEDAs) has a 550 MW energy generation cap. Exporting energy from the Eastern Solar Energy Group would likely require a transmission interconnection into VEA lines, which provides service in Nevada to the west of the Eastern Solar Energy Group and small portions of northeast corner of Inyo and southeast corner of Mono counties. VEA facilities are already part of the California grid. New substations and transmission interconnections would be necessary to export the 550 MW from the Eastern Solar Energy Group. The need for new transmission lines to serve future solar development projects in the Eastern Solar Energy Group is a potentially significant impact.

4.18.4 Level of Significance before Mitigation

Based on the analyses in Section 4.18.3, future utility scale, distributed generation, and community scale solar energy facility projects under the REGPA could result in potentially significant impacts related to energy use. An exceedance of the 250 MW generation in the Western Solar Energy Group would require additional transmission capacity, resulting in a potentially significant impact. The need for new transmission lines to serve future solar development projects in the Southern and Eastern Solar Energy Groups is a potentially significant impact. These impacts require mitigation to reduce them to the maximum extent feasible. Based on the application of ICC Title 21, and the application of local, state, and federal regulations, impacts associated with wastewater, water, stormwater facilities, and solid waste disposal would be less than significant and no mitigation is required. Small scale projects are typically considered to result in no impacts under CEQA.

4.18.5 Mitigation Measures

Utilities and service systems mitigation measures have been developed for solar energy development projects producing more than 20 MW of electricity for offsite use (utility scale) and would be implemented to mitigate adverse impacts to utilities and service systems. As previously mentioned, small scale solar energy projects are considered to result in no impacts under CEQA; however, all individual solar energy facility project applications (including small scale, community scale, and distributed generation) shall be reviewed by the County, and the need for implementation of the following mitigation measures shall be determined based on the professional judgment of a qualified county planner, pursuant to ICC Title 21 and State CEQA Guidelines. For example, community scale solar developments (i.e., roof- or ground-mounted PV panels for a specific community's use) may be determined by a qualified county planner to have no potential impact on utilities and service systems and would not require implementation of the mitigation measures listed in this section. In such cases, the County shall document that no impacts to utilities and service systems would occur and no mitigation measures are necessary.

If a proposed distributed generation or community scale solar development project is determined by the County to have the potential to impact utilities and service systems, then the following mitigation measures shall be implemented as determined necessary by the qualified county planner. The County will review future solar energy development proposals to determine if they meet the requirements of Section 15162 of the State CEQA Guidelines; projects that do not meet the requirements may require additional CEQA analysis prior to approval. Similar to proposed distributed generation and community scale solar energy projects, small scale solar project applications undergo County review, and implementation of additional CEQA review and/or mitigation measures shall be at the discretion of a qualified county planner.

As described above in Sections 4.18.3 and 4.18.4, implementation of solar energy projects under the REGPA would result in potentially significant impacts related to utilities and service systems. Accordingly, the following mitigation measures are provided to address those issues.

Additionally, future solar development projects would implement applicable BMPs and related information from REAT's Best Management Practices and Guidance Manual (REAT 2010). including (but not limited to) preparation of a construction and operation waste management plan, removal of wastewater by a licensed handler, and compliance with local requirements for permanent, domestic water use and wastewater treatment.

MM UTIL-1: Projects within the Western Solar Energy Group will not exceed a combined maximum of 250 MW or 1,500 acres.

Future projects within the Western Solar Energy Group shall be limited to a combined maximum of 250 MW or 1,500 acres of development area). The County shall implement a tracking program to ensure all future solar development projects within the Western Solar Energy Group do not exceed 250 MW. Once the 250 MW (or 1,500 acres of development area) is reached, the County shall not approve further projects within the Western Solar Energy Group unless project applicants can provide proof of adequate and existing transmission capabilities for the project.

MM UTIL-2: Projects within the Southern and Eastern Solar Energy Groups will be required to have necessary and /or adequate transmission lines.

Future development within the Southern and Eastern Solar Energy Groups shall be required to include the necessary transmission lines or provide proof of adequate transmission capabilities for the project.

4.18.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse utility impacts would result from implementation of the proposed project.

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5.0 OTHER CEQA CONSIDERATIONS

5.1 CUMULATIVE EFFECTS

5.1.1 Introduction

Section 15355 of the State CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." These individual effects may entail changes resulting from a single project or from a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the proposed project when added to other past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects occurring over a period of time.

Section 15130 of the State CEQA Guidelines requires that an EIR discuss the cumulative impacts of a project when the project's incremental effect would potentially be cumulatively considerable. Cumulatively considerable means that the incremental effects of the individual project are considerable when viewed in connection with the effects of past projects, other current projects and the effects of probable future projects (State CEQA Guidelines Section 15065[c]). Where a lead agency determines the project's incremental effect would not be cumulatively considerable, a brief description of the basis for such a conclusion must be included. In addition, the State CEQA Guidelines allow for a project's contribution to be rendered less than cumulatively considerable with implementation of appropriate mitigation.

The geographic scope of the cumulative impact analysis varies depending on the specific environmental issue being analyzed. The geographic scope for each environmental issue analyzed is identified in each topical section of this chapter.

According to Section 15130(b) of the State CEQA Guidelines, there are two possible approaches for considering cumulative effects:

1. A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or,

2. A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated region- or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency;

The cumulative analysis for this PEIR uses a combination of the two approaches listed above. Past projects were considered as part of the baseline condition for the analysis conducted in Chapter 4 of this PEIR, although ongoing projects, such as the Owens Lake Dust Mitigation, are also considered as part of the cumulative analysis. These exceptions are noted in the following subsections. With regards to present and probable future projects, projections are based on adopted local or regional plans, such as the General Plan (2001, as amended), and the renewable energy planning and transmission planning documents identified in Table 5-1. The analysis of cumulative effects also considered proposed projects on tribal lands within the County, proposed major utility and transportation infrastructure improvements, and proposed projects on land governed by the NPS, USFS, and BLM. In addition, this PEIR also addresses future projects with characteristics unique to the issue being analyzed.

The State CEQA Guidelines recognize that cumulative impacts and their respective mitigation measures are not necessarily under the control of the lead agency, and may not necessarily be project-specific in nature. Section 15130(c) of the State CEQA Guidelines states:

> With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis.

5.1.2 Cumulative Context

Cumulative analyses are based on an understanding of anticipated growth within an area that would add significance to an impact of the proposed project. The extent of an area to be evaluated in a cumulative impact analysis and the characterization of the anticipated growth depends on the type of resource being evaluated. For example, cumulative impacts to air quality may be considered within the entire Great Basin Valleys Air Basin, which encompasses several California counties, while cumulative impacts related to noise would focus on the sensitive receptors in the immediate vicinity of the project site.

Other related projects that need to be considered in the cumulative analysis include those that would contribute to the impacts on the same environmental resources, infrastructure, or public services and facilities that would be impacted by the proposed expanded fill area and Amended Reclamation Plan evaluated in this PEIR. This could include projects located outside of the Lead Agency's jurisdiction. For the purposes of this PEIR, a list of both past, present, and probable future projects, and projections contained in the General Plan were considered to develop a reasonable estimate of the cumulative impacts that would occur within the County. Refer to Table 5-1 for the list of projects. Refer to Figure 5-1 for the locations of all projects and planning areas discussed.

Table 5-1
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Planning in Inyo County				
1	Desert Renewable Energy Conservation Plan	Desert regions including Inyo County. All SEDAs except the Laws SEDA are within the DRECP area.	Draft EIR underway	Renewable energy planning effort focused on the desert regions and adjacent lands of seven California counties. Intended to help protect and conserve desert ecosystems while allowing for the appropriate development of renewable energy projects. <http://www.drecp.org/>
2	Solar Energy Program/BLM	BLM lands in Arizona, California, Colorado, Nevada, New Mexico, and Utah. Inyo County contains BLM variance solar areas.	Solar programs implemented; ROD issued February 8, 2013 (Final EIS issued July 24, 2012)	The BLM and DOE completed the Programmatic EIS for Solar Energy Development in Six Southwestern States. The BLM's proposed actions are to establish a new BLM Solar Energy Program applicable to utility scale solar energy development. The DOE's proposed action is to develop new program guidance relevant to DOE-supported solar projects. <http://solareis.anl.gov/>
3	Wind Energy Development Program/BLM	BLM lands in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Inyo County contains BLM priority wind areas.	Wind programs implemented; ROD issued January 11, 2006	The BLM completed the Programmatic EIS for Wind Energy Development. The BLM's proposed actions are to establish a Wind Energy Development Program, including amendments to 52 BLM land use plans. <http://windeis.anl.gov/>
4	Haiwee Geothermal Leasing Area/BLM	In Inyo County between US 395 and Naval Air Weapons Station China Lake, south of the South Haiwee Reservoir. This project overlaps the Rose Valley SEDA.	Draft EIR published July 2012	Amendment to the CDCA Plan of 1980 to lease approximately 22,060 acres of BLM lands for geothermal exploration, development, and utilization. <http://www.blm.gov/ca/st/en/fo/ridgecrest/haiwee_geothermal.html>

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Inyo County (cont.)				
5	Northland Power Independence, LLC Solar Project Development/ Northland Power Independence, LLC	Five miles east of Independence, on Mazourka Canyon Road in Inyo County. This project is within the Owens Valley Study Area.	NOP and Initial Study filed March 2013	Construct and operate 200-MW PV power plant on 1,280-acre site. <http://inyoplanning.org/projects/Northland.htm>
6	Owens Lake Solar Demonstration Project/LADWP	Owens Lake in Inyo County.	Under construction	Construct and operate 500-kW ground-mounted PV facility on 5.3 acres. <http://www.inyoregister.com/node/4584>
7	Southern Owens Valley Solar Ranch Project/LADWP	Six miles south east of Independence, on Manzanar Reward Road in Inyo County.	Draft EIR issued August 2013	Construct and operate 200-MW PV power plant on 1,200-acre site.
8	Hidden Hills Solar Electric Generating Station/ Hidden Hills Solar II, LLC (BrightSource Energy)	Charleston View in Inyo County, north of Old Spanish Trail adjacent to Nevada. This project is located within the Charleston View SEDA.	On hold per request of developer to the CEC	Construction and operation of a 500-MW solar thermal power plant on approximately 3,500 acres, with two 750-foot-tall solar power towers, 85,000 heliostats, generators, and related infrastructure. The power will be sold to Nevada (refer to cumulative project ID No. 95 for a description of the associated transmission project). <http://www.energy.ca.gov/sitingcases/hiddenhills/>
9	Munro Valley Solar Project	Two parcels east of US 395 near Olancha, Parcel 1: approximately 1,400 feet north of Walker Creek Road a Inyo County Parcel 2: south of Fall Road. Parcel 2 is located in the Rose Valley SEDA.	Under environmental review; Draft Initial Study issued December 2013	Construct and operate 4-MW alternating current PV facility on two parcels, 20.02 acres and 160 acres (using only 10.03 acres of the 160 acre parcel).

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Transmission Planning in Inyo County				
10	West-wide Energy Corridor/ DOE, BLM, USFS, DOD	Federal lands in 11 western states. The PEIS defined a corridor on BLM lands near US 395 and within the Bishop Resource Management Plan area.	Final EIR certified November 20, 2008	Allows federal agencies to amend their respective land use plans by designating one or more of the proposed energy corridors identified in the Programmatic EIS prepared for the project. Corridor in Inyo County is designated as 1,320 feet wide within the Bishop Resource Management Area, and 10,560 feet wide within the CDCA. <http://corridoreis.anl.gov/>
11	Statewide Transmission Plan/ California Transmission Planning Group	Statewide, including Inyo County. This project evaluated LADWP transmission lines in Owens Valley.	Final Plan issued March 5, 2012	Plan that identifies the transmission infrastructure needed to meet the state's 33 percent RPS goal. It identifies high and medium potential transmission upgrades and high potential transmission corridors for new construction. <http://www.energy.ca.gov/reti/index.html>
12	RETI Transmission Plans Phase 2B Final Report	Statewide, including Inyo County. This project analyzed potential development in Owens Valley.	Final Phase 2B Report dated May 20, 2010	RETI assessed all competitive renewable energy zones in California and in neighboring states that can provide electricity to California consumers determined that the Owens Valley could be developed with less environmental impacts, and greater economic gain than the median scores. (Aspen 2014)
Conservation and Mitigation Projects in Inyo County				
13a	Owens Lake Phase 7a Dust Control Measures Project/ LADWP	Owens Lake in Inyo County. This project area is within the Owens Lake SEDA.	Under construction	Environmental Mitigation and Dust Control Program on an additional 6.5 square miles of Owens Lake. Includes 400 miles of pipe, 900,000 tons of gravel, 1 million tons of earth removed from lakebed and used to construct berms, 40 miles of berm roads, 14 miles of power cable. Dust control will be implemented through shallow flooding, managed vegetation, contoured gravel cover and tillage.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Conservation and Mitigation Projects in Inyo County (cont.)				
13b	Owens Lake Master Project/ LADWP	Owens Lake in Inyo County. This project area is within the Owens Lake SEDA.	Environmental review expected to commence in 2015	Plan would provide framework to manage the diverse resources of the lake, while continuing to control dust. Methods would collectively control dust, conserve water, maintain habitat value, and protect or enhance other lake resources.
14	Lower Owens River Project/ LADWP	Lower Owens River in Inyo County. This project area is within the Owens Valley Study Area and Owens Lake SEDA	Approved. Final EIR issued June 2004	Adapted management project that encompasses re-watering a 62 mile long stretch of the Owens River and adjacent floodplain, and supplying lakes and ponds, waterfowl and shorebird habitat with water. <http://www.inyowater.org/LORP/default.htm>
Other Projects and Plans in Inyo County				
15	Draft Lower Owens River Recreation Use Plan/ LADWP	Lower Owens River in Inyo County. This plan area is within the Owens Valley Study Area and Owens Lake SEDA.	Draft Plan issued February 15, 2013	First Phase of the Lower Owens River Project. A long-range plan to provide direction and guidance in order to establish the Lower Owens River as a recreation destination for local and regional outdoor enthusiasts. <http://www.inyowater.org/LORP/default.htm>
16	Wilderness and Backcountry Stewardship Plan for Death Valley National Park/National Park Service	Death Valley National Park in Inyo County	Finding of No Significant Impact issued July 2013; implementation in progress	Plan to guide the National Park Service and to make decisions regarding the future use and protection of the park's wilderness and backcountry lands. <http://parkplanning.nps.gov/projecthome.cfm?projectID=23311>
17	Saline Valley Warm Springs Management Plan/ National Park Service	Saline Valley Warm Springs area of Death Valley National Park in Inyo County. Near Big Pine, California.	Draft EIS in progress	Plan to guide management actions and to make decisions regarding the Saline Valley Warm Springs area. <http://parkplanning.nps.gov/projectHome.cfm?projectId=39438>

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Other Projects and Plans in Inyo County (cont.)				
18	Inyo National Forest Land and Resource Management Plan Revision/ Inyo National Forest	Inyo National Forest	Draft EIS in progress	The Inyo National Forest is revising its 1988 Inyo National Forest Land and Resource Management Plan under the provisions of the 2012 National Forest System Planning Rule. <http://www.fs.usda.gov/land/inyo/landmanagement/planning>
19	West Mojave Plan Travel Management Plan	3.2 acres of public lands within 9.3 acres in the western portion of the Mojave Desert in San Bernardino, Los Angeles, Kern and Inyo Counties	Supplemental EIS in progress	The travel management plan is pursuant to a summary judgment issued in 2009 remanding the route designations made in the WMP. A remedy order based on this judgment was issued in January 2011 and identified the West Mojave route network with few changes would be in place until the remedy order is satisfied. To satisfy the remedy order, the supplemental West Mojave EIS and specific travel management plans are under development to satisfy the remedy order of new route designations. <http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html>
Other Projects in Inyo County				
20	US 395 Olancha - Cartago Four Lane Project/Caltrans	South of Olancha to north of Cartago. This project is partially within and adjacent to the Owens Lake SEDA.	Final EA/MND in progress	Convert 12.6 miles of the existing US 395 from a two-lane highway into a four-lane highway in Inyo County from south of Olancha (mile post 29.2) to north of Cartago (mile post 41.8). <http://www.dot.ca.gov/dist9/projects/olancha/>

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Other Projects in Inyo County (cont.)				
21	Digital 395 Middle Mile Project/ Digital 395	Along US 395 between Nevada and California. This project is within the Owens Lake, Pearsonville, and Rose Valley SEDAs and the OVSA	Construction complete	A new 583-mile fiber network that mainly follows US 395 between Barstow, California and Carson City Nevada. Also located in West Mojave and Eastern Slopes ecoregion subarea.
22	Adventure Trails Program (Assembly Bill 628 Implementation Update)/ Inyo County	Unincorporated County and City of Bishop roads through and adjacent to the Owens Valley in Inyo County.	Deliberations anticipated late 2014	Pilot project to designate combined-use highway segments up to 10 miles long on unincorporated County roads to link existing off-highway vehicle (OHV) trails and trailheads on BLM and USFS land, and to link OHV recreational-use areas with necessary service and lodging facilities, in order to provide a unified system of OHV trails in the Owens Valley. <http://inyoplanning.org/projects/AdventureTrails.htm>
23	Keeler Dunes Dust Control Project/ Great Basin Unified Air Pollution Control District.	Northeastern edge of the Owens Lake in Inyo County This project is within the Owens Lake SEDA	Under construction	Implement dust control measures (native vegetation and straw bales) on 194 acres to stabilize the Keeler Dunes between the communities of Keeler and Swansea. <http://www.gbuapcd.org/keelerdunes/>
24	Goldtooth South Project/ Briggs Corporation	Briggs Mine in Inyo County This project is near the Trona SEDA	Finding of No Significant Impact issued February 1, 2012	Amendment to Plan of Operations to include a 94-acre increase in the footprint disturbance within the existing 2,363-acre permitted area. The project would extend the mine life by approximately 3 – 5 years.
25	Fort Independence Casino/ Fort Independence Indian Community of Paiute Indians	Fort Independence Reservation in Inyo County. This project is within the Owens Valley Study Area.	NOP dated August 14, 2013; Draft Tribal EIR in progress	Construction and operation of a casino with 80,000 square feet of gaming space a 60-room four-story hotel, restaurants, conference center, and event center.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Kern County				
26	Addison Energy Wind Project	Located near Mojave in southeastern Kern County.	Under environmental review; Final EIR dated March 2014	Construction and operation of 120 MW wind energy facility with 50 wind turbines on 1,325 acres.
27	Alta Wind Energy Project	Southeast of Bakersfield, northwest of Mojave north of SR 58	Operational	300 MW wind energy facility on 2,592 acres
28	Antelope Valley Solar Ranch	Near Lancaster within Antelope Valley, in western Mojave desert	Under construction	230 (2x115) MW solar PV facility on 1,050 acres
29	Arrow Wind Project (Windstar Project)	West of Mojave, south of SR 58	Operational	120 MW wind energy generation facility on 1,007
30	Avalon Wind Energy Project	North of Backus Rd and to the east and west of Tehachapi-Willow Springs Road in the Mojave Desert; in eastern Kern County	Under environmental review; Final EIR	Construction and operation of 300 MW wind energy facility with 127 turbines on 7,369 acres.
31	Barren Ridge 1 Solar Project	North of Mojave and California City, east of SR 14	Approved	Construction and operation of 70 MW solar PV on 588 acres.
32	Beacon Solar Energy Project	North of Mojave and California City, east of SR 14	Approved	Construction and operation of 250 MW solar PV facility on 2,320 acres.
33	Borrego Solar Farm	Edwards Air Force Base	Operational	3.4 MW solar PV facility
34	Catalina Solar Project	Southeastern Kern County, north of Lancaster and west of SR 14	Under construction, operational	130 MW solar PV facility on 1,223 acres
35	Clearvista Wind Project	Southeast corner of Tehachapi-Willow Springs RD and Highline, east of Tehachapi	Approved	Construction and operation of 20 MW wind energy facility with 33 wind turbines on 226 acres.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Kern County (cont.)				
36	Clearwater Yakima Solar	South of Mojave, west of SR 14	Under environmental review, Final EIR dated January 2014	Construction and operation of 40 MW solar PV facility with 180,000 PV solar panels and two substations on 432 acres.
37	Columbia 1 &2 Distributed Solar Project	North of Mojave, north of SR 58	Approved	Construction and operation of 20 and 10 MW solar PV facilities on 165 and 68 acres.
38	Coram Brodie Wind Project	Southeast of Bakersfield, south of SR 58	Operational	102 MW wind energy facility
39	Fremont Valley Preservation Project	North of Mojave and California City, east of SR 14	Under environmental review, NOP dated November 2011	Construction and operation of 1,008 MW solar PV facility on 4,805 acres.
40	Jawbone Wind	East of Bakersfield, west of SR 14	Under construction	39 MW wind energy facility on 640 acres
41	Kingbird Solar	Southeastern Kern County near Rosamond	Under environmental review, Draft EIR dated July 2014	Construction and operation of 40 MW solar PV facility on 324 acres.
42	Lower West Wind Energy Project	Southeast of Bakersfield, and south of SR 58	Approved	Construction and operation of 14 MW wind energy facility on 185 acres.
43	Morgan Hills	Southeast of Bakersfield, south of SR 58	Approved	Construction and operation of 230 MW wind energy facility on 3,604 acres
44	North Sky River Wind Energy Project	East of Bakersfield, north of Mojave, west of SR 14	Under construction	163 MW wind energy facility on 12,781 acres
45	Pine Tree Solar Project	East of Bakersfield, north of Mojave, west of SR 14	Operational	8.5 MW solar PV facility on 34 acres

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Kern County (cont.)				
46	Pinyon Pines Wind I (Alta Wind VII) (Oak Creek Mojave)	Southeast of Bakersfield, south of SR 58	Operational	300 MW wind energy facility
47	Pinyon Pines Wind II (Alta Wind IX) (Oak Creek Mojave)	Southeast of Bakersfield, south of SR 58	Operational	300 MW wind energy facility
48	RE Astoria Solar Project	Southeast of Bakersfield, south of SR 58	Under Environmental Review, NOP dated 2/28/14	Construction and operation of 175 MW solar PV facility on 2,000 acres.
49	RE Rio Grande	South of Mojave along SR 14	Under construction	5 MW solar PV facility on 47 acres
50	Rosamond Solar Project	South of Mojave, west of SR 14	Approved	Construction and operation of three solar PV facilities totaling 190 MW on 1,655 acres.
51	SEPV Mojave West Solar Project	South of Mojave, west of SR 14	Under environmental review, NOP dated 2/3/2014	Construction and operation of 20 MW solar PV facility on 180 acres.
52	Tehachapi Photovoltaic Project	Southeast of Bakersfield, north of SR 58	Approved	Construction and operation of 20 MW solar PV facility on 216 acres.
53	Wind Coram, Inc.	Southeast of Bakersfield, north of Tehachapi	Operational	8 MW solar PV facility on 130 acres

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Other Projects in Kern County				
54	Eastern Kern County Land Acquisition	Located northwest of Mojave, east of SR 14	Approved October 2013	California State Parks is planning to acquire up to 59 privately owned parcels (approximately 28,275 acres) in eastern Kern County, California, from ReNu Resources, LLC. The parcels are interspersed with lands owned by the BLM in the western Mojave Desert, approximately 20 miles north of Mojave and west of SR 14. OHV recreation occurs on many of the parcels, largely on designated roads and trails. The project comprises purchase and management of the parcels for the resource protection
55	Indian Wells Valley Plan	Indian Wells Valley in Kern County	Draft EIR in progress	Amendments to the existing Kern County General Plan to address growing reductions of groundwater availability and ongoing military air navigation operations in the area.
56	Barren Ridge Transmission Project/ LADWP	North of Mojave, west of SR 14	Operational	Operation of 76-mile 230 kV transmission line from the Barren Ridge Switching Station to Haskell Canyon area. Project would result in 70 acres of permanent disturbance.
57	LaPozz Mine	North Kern County, east of SR 14	Operational	A new surface mining operation for pozzolan material located on 145 acres of mining claims administered by the BLM.
58	Tehachapi Renewable Transmission Project	Southeast of Bakersfield, south of SR 58	Under construction	An estimated 173 miles of new and upgraded high-voltage electric transmission lines and substations to deliver electricity from new wind projects in eastern Kern County resulting in 171 acres of permanent ground disturbance.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Los Angeles County				
59	TA High Desert Solar Plant	North of Lancaster along SR 14	Under construction	Construction and operation of 20 MW solar PV facility on 216 acres
60	Silverado Power Six Projects	Southwest of Lancaster	Under environmental review, NOP dated 6/2012	Construction and operation of 172 MW solar PV facility on 750 acres
Other Projects in Los Angeles County				
61	California High Speed Rail	Near Palmdale	UC from Fresno to Bakersfield, further development planned and approved	The high-speed rail is a rail system from San Francisco to Los Angeles with extension to Sacramento and San Diego—a total of 800 miles. Initial operating section planned from Merced through Palmdale to the San Fernando Valley.
62	High Desert Corridor (SR 138)	Southeast of Palmdale	Under Environmental Review, NOP July 2013	Caltrans and LA County Metropolitan Transportation Authority propose the High Desert Corridor, a 63-mile long east–west freeway/expressway, possible toll or rail facility, and possible bike path and green energy element.
Renewable Energy Projects in San Bernardino County				
63	Ivanpah Solar Power Facility	Northern San Bernardino County, north of I-15	Operational	395 MW solar PV facility on 3,471 acres
64	Stateline Solar Farm	Northern San Bernardino County, north of I-15 near the state line with Nevada	Under construction	300 MW solar PV facility on 1,685 acres
65	Agincourt Solar - Lucerne Valley	Northeast of San Bernardino in Lucerne Valley, south of I-40	Approved	10 MW solar PV facility on 80 acres
66	Marathon Solar - Lucerne Valley	Northeast of San Bernardino in Lucerne Valley, south of I-40	Approved	Construction and operation of 20 MW solar PV facility on 152 acres

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in San Bernardino County (cont.)				
67	SEPV2 – Twentynine Palms Solar	South San Bernardino County, south of Twentynine Palms	Operational	2 MW solar PV facility on 20 acres
68	Solutions for Utilities Inc. Phase 1 and 2 (Now Soitec)	East of Barstow near I-40	Approved	Construction and operation of 3 MW solar PV facility
69	Abengoa Mojave Solar Project	West of Barstow, north of SR 58	Under construction	250 MW solar PV facility on 1,765 acres
70	SEPV8 LLC Twentynine Pines	Northwest of Twentynine Palms, north of SR 62	Operational	12 MW solar PV facility on 100 acres
71	SEPV9 LLC Twentynine pines	Near Twentynine Palms, north of SR 62	Operational	9 MW solar PV facility on 80 acres
72	Soda Mountain Solar	Northeast of Barstow along I-15	Under Environmental Review, DEIS 11/29/2013	Construction and operation of 350 MW solar PV facility on 4,397 acres
73	Sunlight Partners Apple Valley (Nunn)	Southeast of Victorville in Apple Valley along SR 16	Approved	Construction and operation of 1 MW solar PV facility on 10 acres
74	Sunlight Partners El Mirage	West San Bernardino County, west of Victorville	Approved	Construction and operation of 2.5 MW solar PV facility on 26 acres
75	Hesperia 14 LLC	Near Hesperia	Approved	Construction and operation of solar PV facility on 12.5 acres
76	Lost Hills Solar	East of Hesperia	Approved	Construction and operation of 33 MW solar PV facility on 307 acres
77	Victor Phelan Solar 1	West San Bernardino County, west of Victorville	Approved	Construction and operation of 17.5 MW solar PV facility on 160 acres
78	Fort Mojave Solar Project and transmission	Fort Mojave Indian Reservation; Needles	Public notice posted March 13, 2013; in planning stages	Construction and operation of 310 MW solar PV facility, and 230 kV transmission line

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Other Projects in San Bernardino				
79	Calnev Pipeline Expansion	Northeast of Barstow along I-15	Draft EIS March 2012	Construction, operation, and maintenance of 233 miles of new 16-inch diameter pipeline from near Las Vegas, Nevada, to Baker, California, paralleling the existing system for most of the route. Project would result in 2,841 acres of ground disturbance.
80	Desert Xpress Enterprise High Speed Rail	Northeast of Barstow north of I-15	EIS complete, ROW issued in 2011	High-speed passenger train in San Bernardino County, California, and Clark County, Nevada. Project would result in 972 acres of permanent ground disturbance. Also located in Mojave and Silurian Valley and Pinto Lucerne Valley and Eastern Slopes.
81	Eldorado-Ivanpah Transmission	East San Bernardino County adjacent to Nevada state line	Operational	Transmission upgrade project between Eldorado and Ivanpah, projects would result in 420 acres of permanent ground disturbance. Project is principally within the I-15 highway corridor.
82	I-15 Joint Port of Entry	East San Bernardino County adjacent to Nevada state line	Under construction	State of California will construct and operate Joint Port of Entry on I-15 in the Ivanpah Valley that will include an Agricultural Inspection Facility and Commercial Vehicle Enforcement Facility. The port of entry will be located on 133 acres.
83	Rasor OHV Recreation Area Plan	East San Bernardino, north of I-40	Began September 2013	California State Parks is preparing a pre-plan analysis report specifying the actions needed to develop and sustain OHV recreation opportunities in the area.
84	29 Palms Training Land/ Airspace Acquisition	North of Twentynine Palms	ROD issued February 19, 2013; Marine Corps will commence using the area in 2015	The Marine Corps studied alternatives for training–land acquisition and accompanying Special Use Airspace. The proposed alternatives would expand the Marine Corps Air Ground Combat Center Twentynine Palms by 163,928 acres to the west and south.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Other Projects in San Bernardino (cont.)				
85	SCE Coolwater-Lugo 500/220 kV transmission	East of Barstow along I-40	Certificate of Public Convenience and Necessity provided to CPUC in August 2013	Construct approximately 65 to 75 miles of new high-voltage transmission lines from Coolwater Substation near Daggett to future Jasper Substation in Lucerne Valley and ending in the Lugo Substation in Hesperia.
86	PG&E Groundwater Remediation	East of Barstow	Ongoing – modifications to the ongoing program considered in 2013	Comprehensively contain and remediate the chromium plume from the historical chromium discharges from the PG&E Hinkley Compressor Station. PG&E is under orders from the Lahontan Water Board to stop plume expansion and clean up the chromium plume.
87	Amargosa Wild and Scenic River Joint Management Plan	North San Bernardino County	Currently in pre-NEPA scoping	BLM is developing a Joint Management Plan for these two overlapping management units.
Renewable Energy Projects in Mono County				
88	Casa Diablo IV	Near Mammoth Lakes	Approved	Construction and operation of 33 MW geothermal plant on 77 acres
Renewable Energy Projects in Riverside County				
89	Mountain View IV	East of Riverside	Operational	49-MW wind energy facility on 1,240 acres

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Project in Nye County (Nevada				
90	Crescent Dunes Solar	Near Tonopah	Under construction	110-MW solar thermal steam turbine facility
91	Amargosa Farm Road Solar Energy Project/ Solar Millennium, LLC	Amargosa Valley	Approved	Construction and operation of 250-MW parabolic trough solar thermal facility. <http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/proposed_solar_millenium.html>
92	Lathrop Wells Solar Project/ Abengoa Solar, Inc.	Amargosa Valley	On hold since 2010	Construction and operation of 500-MW solar facility on 5,217 acres. <http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/lathrop_wells_fact.html>
93	PV Project/ Element Power	Southeast of Pahrump, Amargosa Valley	Permit application pending	Construction and operation of 100-MW solar PV facility on approximately 2,560 acres.
Other Projects in Nye County (Nevada)				
94	Pahrump Valley Airport	In Pahrump	Approved	Pahrump Valley Airport Master Plan developed for establishing a Pahrump Valley Airport. < http://www.pahrumpnv.org/pahrump-nevada/community/pahrump-airport/>
95	Hidden Hills Transmission Project/ Valley Electric Association, Inc.	Pahrump Valley in Nye County and Sandy Valley in Clark County to the town of Jean in Clark County, and terminating at the Eldorado substation near McCullough Pass in Clark County	Draft Environmental Impact Statement underway	Establishment of transmission line ROW on BLM-managed lands, and construction, operation, maintenance and termination of transmission infrastructure improvements, both 230-kV and 500-kV, and a natural gas pipeline to support the Hidden Hills Solar Electric Generating Station (see cumulative project ID No. 8). <http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/hidden_hills_transmission.html>

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Clark County (Nevada)				
96	Silver State South Solar Energy Project/ First Solar	South of I-15, near California/Nevada border; 12 miles east of Primm	Permitting	Construction and operation of 350-MW ground-mounted solar PV facility on 2,900 acres
97	Silver State North Solar Project/ First Solar	South of I-15 near California/Nevada border, 2 miles east of Primm	Operational	Construction and operation of 50-MW ground-mounted solar PV facility on 300 acres
98	Copper Mountain III	Near Las Vegas	Under construction	250-MW solar PV facility
99	Copper Mountain II	Near Las Vegas	Under construction	58-MW solar PV facility
100	Mountain View Solar	Near Las Vegas	Permitting	Construction and operation of 8-MW solar PV facility
101	Pahrump South Solar/ Abengoa Solar Inc.	15 miles southeast of Pahrump, Amargosa Valley	Application pending	Construction and operation of 90-MW solar PV facility on approximately 2,000 acres.
102	Sandy Valley Solar Project/ Boulevard Associates LLC	15 miles southeast of Pahrump, Amargosa Valley	Application pending	Construction and operation of 250-MW solar PV facility on 3,272 acres.
103	Searchlight Wind Energy Project/ Apex Clean Energy	Near Searchlight	Permitting	Construction and operation of 200-MW wind energy facility of 87 2.3-MW turbine generators on 152-160 acres. <http://www.searchlightwind.com/about_searchlight>
104	Nevada 300 Solar Project/ Techren Solar, Inc.	Near Boulder City	Operational	Construction and operation of transmission line on 98 acres of federal land
105	Apex/ North East / Bright Source Energy Solar Partners	Northeast of Las Vegas	Application pending	Construction and operation of 1,200-MW concentrating solar power tower on approximately 2,000 acres.
106	Edge Soleil/ Power Partners Southwest	Northeast of Las Vegas	Application pending	Construction and operation of 250-MW of concentrated solar PV facility on 1,751 acres.

Table 5-1 (cont.)
CUMULATIVE PROJECTS IN THE COUNTIES OF INYO, KERN, LOS ANGELES, SAN BERNARDINO, MONO, RIVERSIDE, CLARK (NV), NYE (NV)

ID No.	Project Name/ Project Owner	Location	Status	Project Description
Renewable Energy Projects in Clark County (Nevada) (cont.)				
107	South Solar Ridge/ Southwest Solar Land Co.	North of Pahrump and east of Las Vegas	Application pending	Construction and operation of 100-MW of concentrated solar PV facility on 2,772 acres.
108	Desert Springs Project/ First Solar	Northeast of Las Vegas	Application pending	Construction and operation of 400-MW solar PV facility on 5,918 acres.
109	Spectrum Solar	Near Las Vegas	Permitting	Construction and operation of 30-MW solar PV facility
110	K-road Moapa Solar Project	Near Las Vegas	Under construction	Construction and operation of 250-MW solar PV facility and construction and operation of 5.5-mile long transmission line.

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5.1.3 <u>Summary of Cumulative Impacts</u>

The proposed project works to minimize cumulative impacts by limiting renewable energy development and providing policies to address potentially ameliorating effects. Individual future solar projects have the potential to contribute to cumulative impacts associated with ongoing development in and around Inyo County, and in adjacent counties. The environmental impacts associated with the individual projects identified in Table 5-1; their cumulative effects, as a group and when combined with the anticipated short-term environmental effects of individual future solar energy projects, are analyzed on a topic-by-topic basis in the following sections.

5.1.3.1 Aesthetics

The geographic scope, or resource study area, for analyzing cumulative aesthetics impacts resulting from the proposed project is the entire County. Cumulative aesthetics impacts for individual projects are generally analyzed within the geographic context of the viewshed for the specific project. However, because the locations of the SEDAs and the OVSA are dispersed throughout the County, the cumulative context for analyzing cumulative aesthetics impacts is based on the potential for future solar energy projects to alter the visual character of the County as a whole.

The proposed project entails adoption of policies and identification of SEDAs and incorporating them into the General Plan to facilitate solar energy development within the County. The SEDAs represent areas identified through a collaborative and analytical process that would be most appropriate for future solar energy projects. As identified in Table 5-2 below, the SEDAs and OVSA encompass a total of 548,734 acres within the County, with a total allowable developable area of 7,620 acres. Within the developable area, based on MW caps identified in the SEDA Table in Section 3.3.1, a maximum of 5,400 acres could be developed.

Table 5-2
TOTAL LAND AREA AND TOTAL ALLOWABLE DEVELOPABLE AREA BY LOCATION

Location	Area (acres)	Total Allowable Developable Area (acres)
Western Solar Energy Group		
Laws SEDA	11,655	120
Owens Lake SEDA	89,247	1,500
Rose Valley SEDA	24,644	600
Pearsonville SEDA	4,469	600
Owens Valley Study Area	369,824	1,500
	Total allowable developable area in Solar Energy Group	**1,500**
Southern Solar Energy Group		
Trona SEDA	4,550	600
	Total allowable developable area in Solar Energy Group	**600**

Table 5-2 (cont.)
TOTAL LAND AREA AND TOTAL ALLOWABLE DEVELOPABLE AREA BY LOCATION

Location	Area (acres)	Total Allowable Developable Area (acres)
Eastern Solar Energy Group		
Chicago Valley SEDA	1,551	300
Charleston View SEDA	39,697	2,400
Sandy Valley SEDA	3,097	600
Total allowable developable area in Solar Energy Group		**3,300**
Total	**548,734**	**5,400**

SEDA = Solar Energy Development Area

Future solar energy projects could consist of utility scale solar energy facilities that involve substantial areas of land disturbance. Such large-scale facilities would introduce dominant visual elements that would substantially contrast with the existing visual environment. Where visible to viewers, such facilities would be expected to be a focal point and in many cases, would dominate the view. Views from longer distances would be potentially disruptive, in that the solar energy facilities and equipment would, depending on the location, introduce industrialized visual elements within a non-industrialized landscape substantially affecting the intactness and unity of the visual environment.

When viewed together with the countywide changes to visual resources anticipated by the General Plan and the cumulative projects listed in Table 5-1, particularly the other solar and renewable energy projects (located primarily within Owens Valley and potentially in the Charleston View SEDA), the change in visual quality across the County could be substantial. Currently there are no large solar energy projects within the County. Implementation of the proposed project and the other planned solar projects in the County and immediately adjacent counties would potentially change the landscape by introducing industrial facilities with strong geometric forms into a largely natural high desert visual setting. Depending on the location of specific solar energy development projects, viewsheds could overlap, which would accentuate the change. As a result, scenic vistas and view corridors available to viewers could be adversely affected, and the visual character and quality of an area could potentially be degraded. Given that up to 5,400 acres of new developed solar facilities could be built in the County, the project's contribution to these adverse visual effects would result in a significant cumulative visual impact. These effects would be exacerbated in areas of concentrated developments near the SEDAs and OVSA, such as in the Owens Valley and in the Amargosa Valley, Nevada, adjacent to the Charleston View SEDA.

New sources of lighting would be added within the County by proposed solar energy projects that could contribute to an overall increase in lighting. As discussed in Section 3.1, operation of power towers can result in significant lighting impacts due to (1) diffuse reflected sunlight at the top of towers results that can create a highly visible and bright source of light in the daytime, (2) the reflection of sunlight on ambient dust particles that can sometimes result in the appearance of light streaming down from the tower in a conical pattern, and (3) installation of aircraft warning lights on taller structures. Given the scale of future solar energy projects that could be implemented across the County (up to over 7,000 acres), the project's contribution of associated visual impacts related to lighting could be cumulatively significant.

As discussed in Section 3.1, glare impacts associated with solar PV, solar trough, and power tower systems would be potentially significant due to the reflective nature of surfaces on solar elements, including solar collectors/arrays and other components such as array support structures, steam turbine engine components, piping, fencing, and possibly transmission towers. Glare tends to be directional and affects a locale where the reflected sunlight is focused at a particular time of day. Similar glare effects could be generated by other planned solar energy projects in the County. The addition of solar energy facilities within the SEDAS and OVSA combined with any one or more of the other solar energy projects listed in Table 5-1 could cause glare effects at numerous locations countywide, and spanning County borders where concentrations of planned and existing solar developments are located in close vicinity of the County (e.g., solar projects and transmission lines in Amargosa Valley, Nevada, which is near the Charleston View SEDA). Viewers along roadways or at public vantage points could be affected by glare produced by these solar facilities. While glare is not unique to solar facilities and can be created by other reflective surfaces and structures, solar energy projects represent a new source of potential glare within the County. Given the magnitude of future solar energy projects that could be implemented by the project across the County (up to 5,400 acres), the project's contribution of associated visual impacts related to glare could be cumulatively significant.

Mitigation Measures

Implementation of the mitigation measures identified in Section 4.1.5 (Mitigation Measures AES-1 through AES-10) would reduce the severity of significant cumulative visual impacts, but would not avoid or reduce them to below a level of significance. Cumulative visual impacts would be considered significant and unavoidable.

5.1.3.2 Agriculture and Forestry Resources

The geographic scope for cumulative analysis of agricultural resources is all of Inyo County, including incorporated areas and public lands. A significant cumulative impact to agriculture or forestry resources would occur if the impacts to these resources created by implementing the REGPA, even if individually less than significant, would make a considerable contribution to a cumulatively significant impact when considered together with similar impacts created by cumulative projects.

No forestry resources occur in the SEDAs or OVSA; therefore, implementation of the REGPA and future development under the REGPA would have no impact to forestry resources, and would not contribute to a potential cumulative impact to forestry resources. Likewise, no Important Farmland or Williamson Act Contracts exist in the County; therefore, implementation of the REGPA would have no impact to these resources, and would not contribute to a potential cumulative impact to agricultural land subject to these designations.

As described in Section 4.2, no potentially important Farmlands under the FMMP have been identified in the County due to budget constraints and lack of published soil data. However, the County is committed to promoting and conserving agricultural lands in the County. The General Plan contains goals and policies to promote and conserve agricultural lands and agricultural land uses in the County; therefore, pursuant to the General Plan, the REGPA's potential to impact agricultural land uses is evaluated.

Past, present, and future development in the County, in combination with solar energy projects developed pursuant to the REGPA, have the potential to cumulatively impact agricultural lands. Of the projects presented in Table 5-1, the Southern Owens Valley Solar Ranch project is proposed for construction within the 32,987-acre Blackrock grazing lease administered by LADWP on LADWP lands in Owens Valley (LADWP 2013). The County falls within the BLM's planning area for the Solar Energy Program and Wind Energy Development Program. Locations of future development under these programs are not identified in the County; however, they could affect existing BLM grazing allotments. These projects, in combination with future developments under the REGPA have the potential to result in a significant cumulative impact to agricultural lands if they would result in a significant loss of agricultural lands in the County.

LADWP and public lands are not under jurisdiction of the County; however, the County, LADWP, and other land managing agencies with lands in the County coordinate planning and land uses in an effort to maintain compatible land uses throughout the County. The elements of the General Plan establish policies that seek to preserve existing agricultural uses and support the expansion of agricultural uses, including leases on LADWP properties in the County. LADWP maintains an MOU with various parties in the County, and has implemented the Owens Valley Land Management Plan (LADWP et al. 2010) that establishes a goal to maintain sustainable levels of livestock grazing and objectives to implement sustainable land management practices for grazing and other resource uses (LADWP 2013).

If future development under the BLM's renewable energy programs does take place in the County, it may affect existing BLM grazing allotments in the County. As previously mentioned, these lands are outside of the jurisdiction of the County; however, the General Plan policies strive to promote agricultural land uses on federal lands in the County. The County would coordinate with the BLM to ensure sustainable practices regarding agricultural conversion would be implemented.

Mitigation Measures

Implement Mitigation Measures AG-1 through AG-3 to minimize impacts to agricultural resources.

5.1.3.3 Air Quality

In analyzing cumulative impacts from a proposed project, the analysis evaluates a project's contribution to the cumulative increase in pollutants for which the OVSA and the Basin are listed as "non-attainment" for the federal and state ambient air quality standards. A project that has a significant impact on air quality with regard to emissions of O_3, PM_{10}, and $PM_{2.5}$, as determined by the screening criteria outlined in Section 4.3, would have a significant cumulative effect.

According to the State CEQA Guidelines, if a project would individually have a significant air quality impact, the project would also be considered to have a significant cumulative air quality impact. With regard to past and present projects, the background ambient air quality, as measured at the monitoring stations maintained and operated by the MDAQMD, measures the concentrations of pollutants from existing sources. Existing project impacts are therefore included in the background ambient air quality data.

The OVSA is a federal nonattainment area for PM_{10} NAAQS, and the Basin is a state nonattainment area for O_3 and PM_{10} CAAQS. Individual projects under the REGPA have the potential to increase emissions of criteria pollutants, including O_3 precursors (VOC, NO_X), CO, SO_2, and PM emissions, from construction and operational activities. Long term increases of criteria pollutants resulting from solar energy facility operations are anticipated to be below applicable thresholds, negligible when compared to regional emissions, and consistent with goals established in the General Plan (Inyo County 2001, as amended). Therefore, operational impacts would not be cumulatively considerable.

Construction Impacts

Locally, cumulative construction particulate impacts are considered when solar energy facility projects may be within a few hundred yards of each other. Construction measures will be incorporated as part of future project implementation under the REGPA to reduce fugitive dust and ozone emissions. Additionally, future projects under the REGPA would be subject to compliance with the GBUAPCD Rules 401 and 402 and the General Plan Policy MER-2.7 (Dust Control). However, if construction activities result in an exceedance of daily thresholds for PM_{10} or O_3, including O_3 precursors, the project would result in a cumulatively considerable net increase in criteria pollutants.

The extent to which all reasonably foreseeable cumulative projects and solar energy facilities developed under the REGPA would result in significant cumulative impacts depends on their proximity and construction schedules. Accordingly, the generation of PM_{10} and NO_X emissions, when combined with other cumulative projects, particularly those occurring nearby and simultaneously, would result in a potentially significant temporary cumulative impact to air quality. Although maximum daily construction pollutant impacts could contribute to a cumulatively considerable impact regarding NO_X and PM_{10} emissions during construction activities, impacts would be temporary, localized to the project site and would not be emitted over long distances. Following completion of solar energy facility construction, all construction-related criteria pollutant impacts would cease. It would be speculative to analyze construction emission concentrations of VOC, CO and SO_X emissions, because project construction schedules and mobile source trip routes vary; however, the background concentrations of these pollutants are low compared to the CAAQS and NAAQS in the Basin, such that cumulative impacts to local ambient air quality would be less than significant.

Operational Impacts

Operation of the solar projects associated with implementation of the proposed REGPA is not anticipated to result in a substantial increase in vehicular or stationary emissions once installed. As a result, long-term NO_X, VOC, and PM_{10} emissions resulting from project operations are anticipated to be below applicable thresholds. Further, implementation of the REGPA would reduce region-wide emissions by promoting facilities that generate energy from sustainable sources, such as solar, which are not dependent combustion of fossil fuels to supply energy needs for the region. Therefore, the project would not contribute to a cumulatively considerable net increase in nonattainment pollutants during operation and impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures AQ-1 through AQ-3 to reduce fugitive dust and NO_x emissions.

5.1.3.4 Biological Resources

The cumulative context for analyzing impacts to biological resources is based on past and planned development in the County that results in the continued loss of biological resources. The geographic extent of the cumulative analysis includes the entire extent of the Owens Valley and western Mojave Desert. Although impacts to biological resources are site specific, project specific impacts contribute to a continued loss of biological resources throughout the range of the species or other biological resource being impacted (e.g., sensitive natural community, wildlife corridor). The cumulative context for biological resources is based on projects located within the geographic range that would impact vegetation communities and species similar to those impacted by future solar development under the REGPA. This includes the entire extent of the Owens Valley and undeveloped areas of the western Mojave Desert. The geographic extent depends on the biological resource being evaluated; however, for the purposes of this analysis, the geographic extent includes all of Inyo County, southern Mono County, Kern County west of the Sierra Nevada, northern San Bernardino County, and undeveloped portions of the Mojave Desert in western Nevada.

Impacts to biological resources from construction and operation of solar facilities and other cumulative development projects include direct loss of habitat, vegetation removal and disturbance, wildlife mortality, injury or displacement of wildlife, dust and air quality pollution, degradation of water quality, introduction and spread of invasive species, the impacts to wildlife of increased human presence, the impacts of operational noises and lighting, habitat fragmentation, impacts to migratory corridors or native wildlife nursery sites, impacts to special status natural communities and protected natural areas, and impacts to federally protected wetlands as defined by Section 404 of the CWA. Within the area evaluated for cumulative effects, the Owens Valley supports the greatest variety of vegetation communities and sensitive habitats, and also has the greatest number of special status species that are either known to occur or have the potential to occur. The Owens Valley also contains a concentration of existing, planned and reasonably foreseeable development projects in Inyo County and immediately adjacent areas within the biological cumulative context area.

Projects in the Owens Valley (Laws, Owens Lake and Roseville SEDAs, and OVSA) include new development (Fort Independence Casino, Owens Lake Solar Demonstration Project, Northland Power Independence, LLC Project, Southern Owens Valley Solar Ranch Project, Haiwee Geothermal Leasing Area), facility expansion (Digital 395, Adventure Trails), highway widening (US 395 Olancha - Cartago Four Lane Project), and ongoing management and mitigation of existing areas (Owens Lake dust control projects, Lower Owens River Project, Keeler Dunes Dust Abatement Project). Other projects in the Mojave Desert include the Hidden Hills Solar Electric Generating Station proposed for development in the Charleston View SEDA, the Briggs Mine Expansion in southern Inyo County, and solar and wind projects in Nevada and northeastern San Bernardino County. Additional cumulative projects in northern Kern and San Bernardino counties are planning projects (e.g., the Indian Wells Valley Plan in Kern County, and the Amargosa Wild and Scenic River in northern San Bernardino Project. Future development under the REGPA as well as other development projects within the cumulative study area for biological resources would be subject to federal, state, and local construction and operation BMPs, avoidance, minimization, and mitigation measures to address those impacts to biological resources described above.

As described in Section 4.4.1, the SEDAs and OVSA are characterized by diverse vegetation communities – in particular, the OVSA and SEDAs in the Western Solar Energy Group contain the greatest variety of vegetation communities associated with the perennial water sources and immediately adjacent mountain ranges. These vegetation communities and communities in the Southern and Eastern Solar Energy Groups have the potential to support numerous special status plant species, sensitive natural communities, and protected natural areas. Cumulative loss of special status plant species would result from projects impacting the same species such that those species become more limited in their distribution, population size, or available suitable habitat. Future construction of solar projects under the REGPA in combination with cumulative development projects in the OVSA and SEDAs could result in a cumulative impact on special status plant species. The impact may be the result of direct removal of habitat or individuals of the species, degradation of habitat by the introduction and spread of invasive species, altered hydrology or reduced water quality, or increased fire risks. Future development of solar projects under the REGPA would be required to mitigate for impacts to special status plants, and implement construction and operation measures to control the introduction and spread of invasive species. At the programmatic level of analysis, the location and scale of impacts to special status plants and sensitive natural communities and protected natural areas resulting from implementing the proposed REGPA is unknown; however it is anticipated that impacts would be reduced to less than significant with the implementation of measures to avoid, minimize, and mitigate for impacts to rare plants, special status communities, and protected natural areas. It is also assumed that other projects would be subject to County policies and CEQA guidelines and would also be required to mitigate for impacts such that those impacts would be reduced to a less than significant level. Therefore, the cumulative impact of the proposed project on special status plants, sensitive natural communities and protected natural areas is expected to be less than significant.

Like cumulative impacts to special status plants, cumulative impacts to special status wildlife species are related to the cumulative loss of special status wildlife species or their habitat, such that those species become more limited in distribution, population size, or available suitable habitat. A variety of special status wildlife species may occur in the SEDAs or OVSA, associated with the diverse vegetation communities and distribution noted above. Future solar development under the REGPA combined with cumulative projects would have the potential to reduce the distribution and/or the overall population size of one or more special status wildlife species discussed in Section 4.4.1.9.

Pursuant to ESA, CESA, and other federal, state, and local regulations, future projects under the REGPA and proponents of cumulative projects would be required to implement measures to avoid, minimize, and mitigate for impacts to special status wildlife. Habitat loss and take of individuals of species would be mitigated by measures developed through consultation with the appropriate agency (CFDW, USFWS). At the programmatic level of analysis, the location and scale of impacts to special status wildlife resulting from implementing the proposed REGPA is unknown; however it is anticipated that impacts would be reduced to less than significant with the implementation of measures to avoid, minimize, and mitigate for impacts to special status wildlife. The construction of cumulative projects could affect the same resources, however, those projects would also be required to implement measures to avoid, minimize, and mitigate for impacts to special status wildlife such that those impacts would be reduced to a less than significant level. Therefore, the cumulative impact of the proposed project on special status plants, sensitive natural communities and protected natural areas is expected to be less than significant.

Implementation of the REGPA would result in significant and unavoidable impacts to birds from solar flux (solar flux associated with solar power tower development), luminosity, and collisions associated with utility scale solar facilities. Inyo County is located along the Pacific Flyway, and contains Important Bird Areas. In particular, the Owens Valley and Owens Lake are important stopovers for migratory birds along the Pacific Flyway. Future solar projects in the Western Solar Energy Group in consideration of additional solar and wind projects along the Pacific Flyway in San Bernardino and Kern County have the potential to cumulatively impact migratory birds by collision. Depending on the technology used, there may also be cumulative impacts to birds from solar flux and luminosity. Currently, there is no mitigation for collisions or solar flux impacts. The proposed solar facility development projects would incorporate measures to minimize the likeliness of solar flux, luminosity, and collisions by birds through particular siting requirements. This is considered a significant and unavoidable cumulative impact.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-24, as applicable, to reduce impacts to biological resources. During future project-level analysis, mitigation measures will be developed for individual resources. In some cases, depending on the type of project, nature of the resource, and type of mitigation proposed, less than significant impacts may be possible, and cumulative impacts may be reduced to below of level of significance.

5.1.3.5 Cultural Resources

As discussed in Section 4.5, Inyo County contains evidence of prehistoric and historic use by people. Although impacts to cultural and paleontological resources are site specific, these resources are finite and project specific impacts would contribute to a continued loss of resources within the region. Therefore, the cumulative context for cultural and paleontological resources includes the entire extent of the Owens Valley, adjacent eastern slope of the southern Sierra Nevada, and western Mojave Desert. This geographic extent includes all of Inyo County, southern Mono County, northern Kern and San Bernardino counties, and undeveloped portions of the Mojave Desert in western Nevada. This area encompasses historic territories of the Owens Valley Paiute, Western Shoshone, Southern Paiute, Kawaiisu tribes, and is appropriate because it is likely that the cultural resources similar to those within the SEDAs and OVSA are present. The cumulative context is defined by the total inventory of all sites and other cultural remains present in the study area which are best understood completely in the context of the cultural body from which they originated. The proposed project, in combination with development in the area could result in a cumulative loss of archaeological, paleontological, prehistoric, or historic resources.

Numerous cultural and archaeological resources are present in the County. As discussed in Section 4.5, implementation of the REGPA has the potential to cause a substantial adverse change in the significance of historical and archaeological resources as defined in Section 15064.5 of the State CEQA Guidelines, and may disturb human remains. Even with implementation of measures to avoid, reduce and mitigate for impacts to cultural and archaeological resources, the actual location, extent and particular characteristics are not known due to the programmatic level of analysis; therefore, the impacts to cultural and archaeological resources, and disturbance to human remains from implementing the proposed REGPA would be significant and unavoidable following mitigation due to the overall project's impacts to the County's cultural landscape. The construction of other projects could affect cultural resources of the same types as those affected by the projects developed under the REGPA. Other projects are subject to federal, state, and local regulations. Proponents for other projects may be able to reduce impacts to CRHR-eligible cultural resources through project planning, or reduce impacts to presently unknown cultural resources to a less than significant level by implementing construction monitoring, evaluating the resources discovered during monitoring, and avoidance or data recovery for historical resources. However, significant and unmitigable impacts to the cultural landscape due to implementation of the REGPA leads to a conclusion that cumulative impacts to these resources would likewise be significant and unmitigable.

Similarly, implementation of the REGPA has the potential to directly or indirectly destroy paleontological resources or unique geologic features primarily during excavation and earth-moving phases of construction. While measures to avoid, reduce and mitigate for impacts to paleontological resources would be implemented, the actual location, extent and particular characteristics are not known due to the programmatic level of analysis; therefore, the impacts to paleontological resources from implementing the proposed REGPA would be significant and unavoidable following mitigation due to the overall project's impacts to paleontological resources within the County. These impacts, in combination with potential impacts to paleontological resources from other projects, would be cumulatively significant.

Mitigation Measures

Implement Mitigation Measures CUL-1a through CUL-1g and CUL-2 to reduce impacts to historic and archaeological resources, as well as human remains. Impacts to paleontological resources would be reduced through implementation of Mitigation Measure PALEO-1. During future project-level analysis, mitigation measures will be developed to address potential impacts to identified resources. In some cases, depending on the type of project, nature of the resource, and type of mitigation proposed, less than significant impacts may be possible, and cumulative impacts may be reduced.

5.1.3.6 Geology and Soils

The context for analyzing cumulative impacts to geological and soils resources is limited to the immediate area of the geologic constraint, with the exception of some geologic impacts that are regional, such as earthquake risk. As discussed in Section 4.6, future development under the REGPA in any of the SEDAs or the OVSA would result in less than significant impacts, with mitigation incorporated, to: (1) seismic ground rupture, ground acceleration (ground shaking), and liquefaction/related effects (e.g., dynamic settlement); (2) landslides/slope instability; (3) geologic and soil instability; and (4) expansive soils. The measures reducing the impacts to less than significant are related to existing regulatory framework controlling the design and construction of structures in California, and actions required to obtain a grading and/or development permits at the local level are sufficient to avoid or substantially reduce the potential impacts.

Implementation of the REGPA could result in solar development projects being constructed concurrently with, and in proximity to, other land use and infrastructure development projects. While geotechnical impacts may be associated with other developments in the area of solar projects under the REGPA, several potential impacts (e.g., unstable soils, expansive spoils, liquefaction, and soil erosion) are site specific, and would be addressed on a project-specific basis. Seismically induced geologic hazards and unstable soil hazards are site-specific and depend on local conditions as well as the characteristics of the overlying improvements. Solar projects under the REGPA and other cumulative projects would be required to comply with the applicable state and local requirements including, but not limited to, the CBC and local building codes. Therefore, implementation of the REGPA would not contribute to a greater cumulative impact to geotechnical issues.

Seismic impacts are a regional issue and are addressed through compliance with applicable codes and design standards. Thus, individual projects (of the type included on the cumulative project list) do not increase the potential for a seismic event, as the effects would be based on site-specific underlying conditions and proximity to the source of the seismic event. Therefore, implementation of the REGPA would not contribute to a greater cumulative impact to seismic ground shaking or ground rupture.

Implementation of site-specific SWPPPs would reduce the potential for erosion hazards for solar projects under the REGPA. Impacts from erosion or loss of topsoil for other cumulative projects may require site-specific analysis to determine the soils' permeability, slope, angle and length, extent of groundcover, and human influence on the sites, however all projects in the cumulative setting would be required to adhere to similar erosion control requirements of a Drainage, Erosion, and Sedimentation Control Plan, as would solar projects under the REGPA. All construction phases of this Project, and other cumulative projects in the area, would be required to adhere to all federal, state, and local programs, requirements, and policies pertaining to building safety and construction permitting. Accordingly, no significant cumulative impact would result from the Project in conjunction with development of other cumulative projects.

Mitigation Measures

Implement Mitigation Measure GEO-1 to reduce impacts to geology and soils, and to not contribute to a cumulative impact.

5.1.3.7 Greenhouse Gases

The cumulative context for analyzing cumulative GHG impacts is based on whether the proposed project, in combination with existing activities and future development projects, would contribute to the cumulative increase of GHG emissions that could result in climate change, or conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions in California.

Implementation of the proposed project could result in solar development projects being constructed concurrently with, and in proximity to, other land use and infrastructure development projects. As discussed in Section 4.7, however, all impacts related to GHG emissions and climate change are, by definition, cumulative impacts; therefore, the amount of GHG emissions resulting from the proposed project is the primary concern. Construction-related GHG emissions would be associated with the use of construction equipment, heavy-duty truck trips, and worker vehicle trips. Once operational, the construction impacts from the solar developments would eventually be offset following completion of construction activities resulting in a net beneficial impact, if the renewable source of energy would displace electricity generated by fossil-fuel-fired power plants. Additionally, AB 32 calls for a reduction in GHG emissions to 1990 levels by 2020. The proposed project would assist in the attainment of the state's goals by utilizing a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants. The proposed project would therefore be consistent with state initiatives aimed at reducing GHG emissions and in the long-term, would not contribute to a cumulatively considerable significant impact. Cumulative impacts would be beneficial and less than significant.

Mitigation Measures

No significant impacts were identified, and no mitigation is required.

5.1.3.8 Hazards and Hazardous Materials

Typically, the geographic scope of cumulative impact analysis for hazardous materials includes the area immediately surrounding the affected hazardous materials location. As discussed in Section 4.8, future development under the REGPA could result in potentially significant impacts related to: (1) the known or potential occurrence of hazardous material sites in all nine SEDAs, the OVSA, and the potential off-site transmission line corridor associated with the Charleston View SEDA; (2) airport-related hazards for the Laws, Trona, Charleston View (and related potential off-site transmission line corridor), and Sandy Valley SEDAs, as well as the OVSA; (3) school-related hazards for the OVSA; and (4) wildfire hazards for all nine SEDAs, the OVSA, and the potential off-site transmission line corridor associated with the Charleston View SEDA. With implementation of BMPs and mitigation measures, all potentially significant impacts would be avoided or reduced below a level of significance.

The cumulative development projects located within the SEDAs could involve the storage, use, disposal, and transport of hazardous materials to some degree during construction and operation. None of the cumulative projects is associated with production and manufacturing of hazardous materials other than incidental hazardous materials as a by-product of the site activity. All cumulative development projects, including solar facilities, are subject to existing agency laws and regulations that would insure that the effects of the project, when considered with the cumulative projects would not create a cumulatively hazard to the public or environment related to the handling or accidental release of hazardous materials. With implementation of mitigation measure HAZ-1, the project would not contribute to cumulative hazards to the public or environment related to hazardous materials.

Cumulative hazards to aviation from future solar development would be related to the introduction of structures such as solar power towers, transmission towers, or solar arrays within airport hazard zones and an increased incidence of glare from multiple solar projects in an area that could impact the operations of aviation.

There would be no potential cumulative aviation safety impacts from future solar development in the Southern Solar Energy Group. The Western Solar Energy Group contains the Bishop Airport which is within the OVSA and within one mile of the Laws SEDA. The Northland Power Independence Solar Project and Southern Owens Valley Solar Ranch Project are proposed cumulative solar PV facility projects for the OVSA that would tie into the existing LADWP transmission line through the valley. The total allowable capacity for the entire Western Solar Energy Group is 250 MW; therefore, only one of the projects could be developed, and any additional development along the entire LADWP transmission line would not exceed 50 MW, minimizing the potential for cumulative glare from multiple projects. Additionally, PV facilities are typically low profile and typically do not include tall ancillary facilities. Similarly, cumulative solar projects nearest to the Pearsonville SEDA are the Pine Tree Solar Project, Beacon Solar Energy Project, and Barren Ridge 1 Solar Project located approximately 47 miles southwest of the SEDA, along SR 14 in Kern County. Due to the relatively long distance, these projects would not be expected to result in a cumulative impact to aviation related to glare or the introduction of structures within the airport hazard zone.

Cumulative solar projects nearest to the Eastern Solar Energy Group are the Ivanpah Solar Power Facility and Stateline Solar Farm in San Bernardino County, various solar PV facility project in operation and planned for the Amargosa Valley, Nevada and the Silver State South and North Solar Power projects in Nevada, located approximately 20 miles southeast of Sandy Valley, along I-15 at the California/Nevada border. Although solar PV facilities contribute to glare, they contribute to relatively less glare than solar thermal projects using arrays of mirrors. The Hidden Hills Solar Project proposed for the Charleston View SEDA is a solar thermal power tower facility that would involve constructing two 750-foot-tall solar power towers and associated infrastructure. This project would not be located within two miles of a public or private airport – the planned Pahrump airport would be approximately 12 miles northwest of the project; however, this project could contribute to cumulative impacts to glare when combined with other existing and planned solar facilities in the nearby Amargosa Valley.

All future solar development under the REGPA located within two miles of a public or private airport would be required to conduct site-specific Airport Safety Investigations to address potential airport-related concerns consistent with federal, state, and local regulations including FAA review of solar projects (FAA Solar Guide), Policy AVI-1.2 of the General Plan, and the County Airport Hazard Overlay Ordinance (Ord. 943 § 4, 1994). Cumulative projects would be subject to the same federal regulations, and state and local regulations depending on the location of the project. Consistent with current policies and regulations, no development may occur within the hazard zone of an airport that could result in airport-related hazards. Based on mandatory conformance with associated regulatory standards, and coordination with FAA, potential impacts related to cumulative impacts to aviation would be less than significant.

Only the OVSA contains schools, therefore, cumulative projects in OVSA would increase infrastructure and may increase industries and services that use hazardous materials or emit hazardous emissions. If located within 0.25 mile of schools, these projects would result in a cumulative risk to schools. However, future development in the OVSA under the REGPA located within 0.25 mile of schools would be required to conduct site-specific school safety investigations to ensure potential impacts would be reduced to less than significant. Cumulative projects would be subject to the same regulations, and compliance with these regulations would ensure that risks associated with hazardous emissions and schools would remain at a less than significant level. With implementation of Mitigation Measure HAZ-3, the project would not contribute to cumulative impacts to school-related hazards in the OVSA.

Much of the County and the surrounding areas are rated as moderate or high for fire hazard ratings. Implementation of the REGPA would allow development in areas that are prone to wildland fires, which would expose people and structures to significant loss, damage, or death. Where cumulative projects are constructed in close vicinity, the cumulative impact is increased. Proposed projects under the REGPA would be required to undergo site-specific Wildfire Safety Investigations to evaluate potential wildfire impacts and identify associated remedial measures. With implementation of mitigation measure Mitigation Measure HAZ -4, the projects cumulative impacts on fire hazards would be less than significant.

Mitigation Measures

Implement Mitigation Measures HAZ-1 through HAZ-4 to reduce impacts to hazards and hazardous materials to a less than significant level. The REGPA would therefore not contribute to a cumulatively significant impact.

5.1.3.9 Hydrology and Water Quality

The cumulative context for hydrology and water quality depends on the issue being considered. The geographic scope includes drainage basins, watersheds, water bodies or groundwater basins, depending on the location of the potential impact and its tributary area. As discussed in Section 4.9, future development under the REGPA in any of the SEDAs or the OVSA would result in less than significant impacts, with mitigation incorporated, to: (1) drainage alteration; (2) flood hazards; (3) groundwater resources; and (4) long-term water quality. Water quality, drainage alteration, and flood hazards are cumulatively considered within their watershed and receiving waters.

Construction and development associated with cumulative regional land use projects and future development under the REGPA in any of the SEDAs or the OVSA would contribute point and non-point source pollutants to downstream receiving waters that have the potential to violate water quality standards. Further, the natural hydrology in the region would be altered through cumulative development projects resulting in increases in impervious surfaces and grading activities to achieve a desired slope. Impacts to hydrologic resources resulting in drainage alteration and flooding and water quality as a result of development under the REGPA would be less than significant based on mandatory project conformance with applicable regulatory requirements including the CWA, NPDES Construction General Permit and related County standards. Development and construction proposed under most cumulative projects would also be subject to regulations requiring compliance with the same water quality standards and applicable basin plans and local regulations. These federal, state, and local regulations would ensure that no significant cumulative impacts to hydrologic resources and water quality would result from the project in conjunction with development of other cumulative projects.

Groundwater basins typically serve localized areas; therefore, cumulative impacts to groundwater supplies and recharge would be associated with the groundwater dependent areas of the individual basins. The extent of groundwater use and recharge for future projects under the REGPA is not known, as it depends on the technology being constructed. Project specific evaluations would be conducted to evaluate potential impacts to groundwater supplies and recharge and to identify associated remedial measures. Groundwater investigations are cumulative in their analysis, as they consider current and proposed withdrawals and recharge. As a result, any required mitigation would address potential cumulative impacts resulting from the project in conjunction with development of other cumulative projects in the basin. With implementation of Mitigation Measure HYD-2, the REGPA would not contribute to cumulative impacts to groundwater basin supplies and recharge.

Mitigation Measures

Implement Mitigation Measures HYD-1 through HYD-3 to reduce impacts to hydrology and water quality. The REGPA would therefore not contribute to a cumulatively significant impact.

5.1.3.10 Land Use and Planning

As discussed in Section 4.10*,* the proposed REGPA would result in a less than significant impact associated with the physical division of an established community. As discussed in Section 4.10, the SEDAs are generally located in areas of the County containing minimal development. No cumulative projects are identified as occurring in the Laws, Pearsonville, Trona, Chicago Valley, or Sandy Valley SEDAs, thus, there would be no cumulative impacts within those SEDAs associated with the division of an established community.

A number of cumulative projects are proposed and/or occurring within the Owens Lake SEDA and the community of Keeler is located within the Owens Lake SEDA, east of Owens Lake. The cumulative projects occurring within the Owens Lake SEDA include the Owens Lake Solar Demonstration Project, the Owens Lake Phase 7a Dust Control Measures Project, the Owens Lake Master Project, the Lower Owens River Project, the US 395 Olancha-Cartago Four Lane Project, the Digital 395 Middle Mile Project, and the Keeler Dunes Dust Control Project. The

Owens Lake Solar Demonstration Project, the Owens Lake Phase 7a Dust Control Measures Project, the Owens Lake Master Project, the Lower Owens River Project occur within the Owens Lake dry lake bed, and the Keeler Dunes Dust Control Project occurs along the northeastern edge of the dry lake bed. The remaining two projects occur along the US 395 corridor. As such, none of the cumulative projects in the Owens Lake SEDA would occur within or physically divide the community of Keeler.

The Haiwee Geothermal Leasing Area overlaps with the Rose Valley SEDA, and the Digital 395 Middle Mile Project traverses through the Rose Valley SEDA. The Rose Valley SEDA contains the communities of Dunmovin and a portion of the community of Haiwee. As discussed for the Owens Lake SEDA, the Digital 395 Middle Mile Project occurs along the US 395 corridor and would not physically divide communities within the Rose Valley SEDA. The Haiwee Geothermal Leasing Area occurs on BLM lands and would occur southeast of the communities of Dunmovin and Haiwee. Neither of the cumulative projects occurring within the Rose Valley SEDA would physically divide an established community.

The Hidden Hills Solar Electric Generating Station is proposed in the Charleston View SEDA, north of Old Spanish Trail, adjacent to the Nevada state line. The community of Charleston View is located within the Charleston View SEDA, south of Old Spanish Trail, and the remainder of the SEDA is undeveloped. There would be no impact associated with the division of an established community in the Charleston View SEDA. No cumulatively considerable impact contributing to the physical division of an established community would occur with adoption of the REGPA.

Each cumulative project would be subject to the appropriate land use consistency regulations and restrictions of the land use agency controlling the land. The land entitlement and CEQA/NEPA processes that are conducted for each cumulative project would ensure that each project is consistent with applicable land use plans and policies. Similarly, agencies participating in the applicable HCPs would be subject to their mitigation requirements and restrictions. No cumulatively considerable impact associated with land use plans/policies and HCP consistency would occur with adoption of the REGPA.

Mitigation Measures

No significant impacts were identified, and no mitigation is required.

5.1.3.11 Mineral Resources

The geographic context for the analysis of cumulative impacts related to mineral resources is the extent of the County, and immediately adjacent areas to the extent of the resource. As described in Section 4.11, construction and operation of future solar development under the REGPA in any of the SEDAs or the OVSA future development under the REGPA in any of the SEDAs or the OVSA would result in potentially significant impacts related to the loss of regionally or locally important mineral resources, as well as associated potential conflicts with valid mineral entries such as mining claims and mineral leases. With implementation of the identified mitigation measures, these impacts would be reduced to a less than significant level. The identified cumulative development projects have the potential to result in land uses that are incompatible with mining and resource recovery that could result in a cumulative loss of available resources. When considering the availability of existing mineral production areas on public land as compared with the locations of cumulative projects in the County, it is anticipated that cumulative impacts to mineral resources would be less than significant.

Pursuant to SMARA, the state must map and classify regionally significant mineral resources in part to help protect mineral resources in areas subject to urban expansion or other land uses that could preclude mineral extraction. Non-federal projects in Inyo County and the adjacent counties in California are subject to the rules and regulations of SMARA and the protections of mineral resources included in general plans or other planning documents of the adjacent jurisdictions. Development on BLM and USFS lands must consider mineral resource availability pursuant to federal regulations described in Section 4.11. Further, renewable energy development does not preclude future extraction of mineral resources after decommissioning. As a result, future development under the REGPA would not contribute to a cumulatively considerable impact on mineral resources.

Mitigation Measures

Implement Mitigation Measure MIN-1 to minimize impacts to mineral resources. The REGPA would therefore not contribute to a cumulatively significant impact.

5.1.3.12 Noise

The geographic extent for the analysis of cumulative impacts related to noise is generally limited to areas within approximately 0.25 mile of the project components and access routes. This area is defined as the geographic extent of the cumulative noise impact area because noise impacts would generally be localized, mainly within approximately 500 feet from any noise source; however, it is possible that noise from different sources within 0.25 mile of each other could combine to create a significant impact to noise-sensitive land uses at any point between the projects.

Potential operational noise impacts from cumulative projects would be localized and all cumulative projects would be required to comply with the noise standards within the jurisdiction that a project is located. As discussed in Section 4.12.3.1 (Issue 1), solar energy developments would result in operational noise associated with on-site equipment, maintenance crews and activities, as well as the potential to generate corona noise. Preparation of a noise technical report for solar facilities proposed within 500 feet of noise-sensitive land uses would ensure compliance with applicable County laws, regulations, and policies during operation of the solar project. If necessary, the technical report would identify mitigation measures to reduce potential operational noise impacts from new solar developments to a less than significant level. The REGPA and resulting solar developments, in combination with other cumulative projects, would not result in a cumulatively significant increase in permanent ambient noise levels.

Groundborne vibration is also a localized phenomenon that is progressively reduced as the distance from the source increases. The area of cumulative impact that would be considered for the vibration cumulative analysis would be only those projects within the immediate vicinity of the SEDAs and the OVSA. The primary source of groundborne vibration from cumulative projects would be construction equipment, such as pile drivers or blasting equipment. Construction of the cumulative projects within the vicinity of the SEDAs and the OVSA is not likely to result in excessive groundborne vibration due to the localized nature of vibration impacts, and the likelihood that all construction would not occur at the same time or at the same location. As discussed in Section 4.12.3.2 (Issue 2), groundborne vibration due to solar energy operations would not result in a significant impact. The REGPA and resulting solar developments, in combination with cumulative projects, would not result in a cumulatively significant impact associated with excessive groundborne vibration.

As discussed in Section 4.12.3.3 (Issue 3), operations and maintenance activities for solar energy projects would require occasional vehicle trips. Due to the relatively low number of anticipated trips and infrequency of vehicular trips associated with the maintenance of solar energy developments, transportation noise increases, in comparison to existing conditions, would not be anticipated to be perceptible. Therefore, the REGPA and resulting solar developments, in combination with other cumulative projects, would not result in a cumulatively significant increase in permanent ambient noise levels.

As noted earlier, noise impacts are highly localized due to the attenuating effect that distance has upon noise levels. Construction of cumulative development projects including the projects resulting from implementation of the REGPA are not likely to result in a substantial temporary increase in ambient noise levels due to the localized nature of noise impacts, and the likelihood that construction projects would not occur simultaneously or at the same location. In addition, construction noise due to cumulative projects would be subject to the noise standards that apply to each affected jurisdiction. As discussed in Section 4.12.3.4 (Issue 4) of this PEIR, all construction projects resulting from the REGPA would be required to comply with applicable local regulations that limit construction hours, and construction of all REGPA projects would implement best management practices to minimize construction noise. The REGPA and resulting solar developments, in combination with cumulative projects, would not result in cumulatively significant increases in noise levels during construction.

Exposure to aircraft noise is also a localized impact. As discussed in Section 4.12.3.5 (Issues 5 and 6) of this PEIR, implementation of the proposed REGPA would result in the development of solar energy projects throughout the County and would not involve any construction or long-term operational features for human occupancy that would result in regular exposure to aircraft noise. Therefore, the REGPA and resulting solar developments, in combination with cumulative projects, would not result in a cumulatively significant impacts associated with aircraft noise.

Mitigation Measures

No significant cumulative impacts were identified, and no mitigation is required. However, mitigation measures included in Section 3.12.5 will minimize project noise to the extent feasible.

5.1.3.13 Population and Housing

Potentially significant cumulative population and housing impacts could occur if cumulative projects would bring more jobs to the County, resulting in the need for additional labor force and the construction of housing to accommodate a labor force. As discussed in Section 4.13, it is expected that construction workers would travel throughout the County to work on future solar development projects associated with the REGPA, and that workers may also come from outside of the County to do temporary construction work. If cumulative project construction periods overlap, the cumulative influx of temporary construction workers into the County would temporarily increase demand on transient housing as workers seek accommodations in proximity to project sites.

Long-term management plans, including renewable energy planning, transmission planning, other management plans identified as cumulative projects would not directly result in the generation of construction jobs and would not contribute to cumulative impacts associated with a construction work force and the need for temporary housing. Additional renewable energy projects that could occur in addition to projects accommodated by the proposed REGPA are listed in Table 5-1. According to currently available information, construction of the Northland Power Independence LLC Solar Project Development is imminent, with a 9 to 12 month construction period. Similarly, the Owens Lake Solar Demonstration, the Owens Lake Phase 7a Dust Control Measures, and Keeler Dunes Dust Control projects are under construction. Given their current statuses, most of these projects would likely be completed prior to implementation of future solar development projects in the SEDAs and would not contribute to cumulative impacts associated with construction work forces and associated temporary housing. Construction of other renewable energy projects, including the Southern Owens Valley Solar Ranch Project and the Hidden Hills Solar Electric Generation Station project could occur concurrently with future solar development within the SEDAs. Additionally, the US 395 Olancha-Cartago Four Lane Project and the Fort Independence Project construction could occur concurrently with future solar development in the SEDA and require temporary housing for construction workers.

Renewable energy projects in adjacent counties, for the most part, would not contribute to a cumulative impact associated with construction workers and temporary housing. The renewable energy projects in the northeast portion of Kern County may have construction workers occupying housing that would be used by construction workers of other cumulative projects and/or future solar development in the Pearsonville, Rose Valley, and Trona SEDAs, particularly the available housing in the City of Ridgecrest. While the potential for cumulative impacts depends on the timing of each project, due to the size of the construction workforce for each project, and the availability of temporary housing in relation to the needed workforce, coupled with the availability of an estimated 5,158 vacant housing units, 2,855 hotel rooms, and 1,370 campground spaces with RV hookups in the County and the adjacent areas of Pahrump, Nevada and Ridgecrest, California, it is concluded that cumulative impacts associated with the housing of the needed construction workforce would be less than significant.

In addition to the potential workforce and housing impacts discussed above, long-term cumulative impacts could occur if multiple projects require the relocation of long-term workers to the County that causes an increase in population. As discussed in Section 4.13, relocation of workers to the County is expected to be minimal, as solar projects require small operational staffing levels and much of the permanent workforce is expected to be filled by people already residing in the County. Other renewable energy projects occurring in the County would similarly require small operational workforces that would, at least partially, be filled by workers already residing in the County. Many of the management plans identified in Table 5-1 would not directly generate long-term workers. Additionally, projects such as the US 395 Olancha-Cartago Four Lane Project and Keeler Dunes Dust Control Project are temporary construction projects and would not result in long-term employment opportunities. The Goldtooth South Project that would increase a mine footprint and expand the life of the mine would not generate substantial new employment opportunities, but rather, would extend the operational lifetime of the mine. The Fort Independence Casino Project would generate new long-term employment opportunities. The exact number of long-term jobs generated from cumulative projects is not known; however, the number of jobs associated with renewable energy projects is expected to be quite limited. Similar to the discussion in Section 4.13, cumulative projects in the County are expected to provide jobs for unemployed workers in the existing County workforce. Based on 2010 census data, approximately 7 percent of the County workforce is unemployed. Long-term jobs generated by renewable energy projects and the Fort Independence Casino Project would likely be filled primarily by those in the County seeking employment. The relocation of long-term workers from outside the County may still occur, however, to fill some of the long-term jobs generated by the cumulative impacts. In any event, as discussed in Section 4.13*,* based on 2010 census data there are 1,429 vacant housing units in the County, which would likely accommodate those who have relocated from outside of the County for long-term jobs.

Mitigation Measures

No significant impacts were identified, and no mitigation is required.

5.1.3.14 Public Services

The proposed REGPA and associated future solar development projects within the SEDAs would result in potentially significant impacts associated with the provision of fire and police protection services. Other cumulative projects would also result in an increased demand for fire and police protection services due to potential medical emergencies, hazardous materials spills, fire protection needs, vehicle accidents, theft or vandalism, and the need for other police protection services. The greatest numbers of workers associated with a given project would be during construction, during which time the demand for public services would be the greatest. If cumulative project construction periods overlap, the cumulative influx of temporary construction workers into the County would temporarily cumulatively increase demand on fire and police protection services. Projects developed under the REGPA would be required to implement measures (mitigation measures PUB-1 through 3) to mitigate for fire and police protection services, ensure public safety response times, and provide onsite security during construction and operation. As a result, construction of the project would not contribute to cumulative impacts to public services. The cumulative projects listed above would likely employ a temporary workforce and would not require the development of new structures that would require fire and police protection.

During operation of cumulative projects, projects that would create a permanent employment opportunities, including renewable energy projects, would have small workforces requiring minimal fire and police protection services. Regardless, each cumulative project would result in a small but incremental impact to fire and police protection services, particularly those projects that are located in more isolated portions of the County. The mitigation measures described above would be implemented and would reduce potential operational impacts to fire and police protection services to below a level of significance. Therefore, operation of future projects under the REGPA would not contribute cumulative impacts to fire and police protection services during operation.

The proposed REGPA would not result in significant impacts to schools, as no residential uses are proposed, and the in-migration of new residents to the County associated with jobs at future solar development projects is considered to be minimal. All cumulative projects with impacts to schools would be subject to the payment of school mitigation fees required by Senate Bill 50. Cumulative school impacts would be less than significant.

Impacts to parks and emergency services associated with the proposed REGPA and future solar development projects is expected to be minimal due to the relatively small number of jobs generated from long-term operation of future solar development projects. New residents to the County associated with employment opportunities arising from cumulative projects would potentially have a cumulative impact on parks and emergency services, resulting in increased usage of these services. These impacts are expected to be less than significant due to the small number of permanent jobs associated with renewable energy projects and the availability of an unemployed workforce in the County, as discussed above in the population and housing discussion.

Mitigation Measures

No significant impacts were identified, and no mitigation is required.

5.1.3.15 Recreation

The geographic scope for analyzing cumulative recreation impacts resulting from the proposed project is the entire County because the population-based park standards set forth in the General Plan are applied on a County-wide basis. Furthermore, the locations of the SEDAs and the OVSA are dispersed throughout the County.

The proposed project would not displace or preclude existing or planned recreational uses, nor would it block or sever access to existing recreational uses. Therefore, the proposed project would not result in direct or indirect impacts to recreational areas and would not contribute to a significant cumulative impact to recreational uses.

The demand for local recreational facilities is directly related to increases in population. The proposed project and identified cumulative projects would not directly result in substantial population increases because they consist of solar and renewable energy plans and projects, utility projects (transmission lines), conservation and mitigation plans, resource management plans, one roadway improvement project, and a casino with hotel. None involve residential development or other project types that would increase population levels within the County such that substantial physical deterioration of recreational facilities would occur or be accelerated. If cumulative project construction periods overlap, the cumulative influx of temporary construction workers into the County would temporarily increase demand on recreational facilities. Construction workers may use parks and other recreational facilities near the project site or housing, including campsites as temporary housing. Although an influx of construction workers during construction may temporarily increase use of recreational facilities in the County, construction personnel associated with construction of future projects under the REGPA would partially come from within the County and would be accounted for in the current County population levels and not result in an increase in recreational facility needs. Workers from out of the County are not expected to relocate to the area with their families, and would not generate a substantial demand for local park services. Construction of the proposed project would not contribute cumulatively to a substantial increase in demand for park services.

As described in Section 3.16, the BLM and USFS operate campgrounds within the County and the sites have 14-day limits for camping in any one location. As described previously in population and housing, construction timing of the cumulative projects are not anticipated to result in cumulative impacts to housing. Therefore, construction workers would not need to seek campsites for temporary housing, and cumulative impacts to those facilities would be less than significant. The proposed project would not contribute to significant cumulative impacts on recreational facilities in the County during construction of future solar facilities under the REGPA.

The relatively small number of long-term jobs generated by the proposed project and cumulative projects would not be expected to cause a substantial population increase or an increased demand or usage of recreational facilities. No new or expanded recreational facilities would be required. The proposed project, therefore, would not contribute to a significant cumulative impact to population-based park and recreational facilities.

Mitigation Measures

No significant impacts were identified, and no mitigation is required.

5.1.3.16 Socioeconomics

The construction of the renewable energy projects identified in Table 5-1, combined with energy projects developed under the REGPA, may result in the temporary in-migration of workers into Inyo County. Overlapping construction of these potential projects would further increase temporary construction worker in-migration into the County. However, with respect to renewable energy development, it is likely that the Inyo County projects identified in Table 5-1, and renewable energy projects in adjacent counties, would share some specialized workers between the projects. Additionally, Policy ED-4.5 of the REGPA encourages future solar energy developers to employ the local labor force during development and for long-term facility maintenance, and provide educational and training opportunities. This would help to reduce the amount of temporary in-migration. Furthermore, if project construction schedules and activities do not overlap, there would be a further reduction in total cumulative temporary in-migration. Because most of the projects identified in Table 5-1 have already begun their environmental review processes, they are likely to begin and potentially complete construction prior to any renewable project permitted after completion of the Inyo County REGPA. In addition, workers on solar energy projects in adjacent counties are not expected to seek temporary lodging within Inyo County.

As previously mentioned, if cumulative project construction periods overlap, the cumulative influx of temporary construction workers into the County would temporarily increase demand on transient housing as workers seek accommodations proximate to project sites. Given the existing numbers of available housing units and vacancy rates within the County, and consideration of the construction schedules of cumulative projects as discussed previously in *Population and Housing*, sufficient rental housing is available for construction workers. However, the cumulative demands of construction workers seeking transient accommodations (hotels, motels, recreational vehicle, and mobile home parks) are expected to impact the availability of those accommodations for recreationists and others. This is primarily because the overall number of transient units within the County is small compared to areas with larger overall population. The development of larger renewable energy and other infrastructure projects within the County would require large construction workforces in relation to the total population of Inyo County.

While some degree of social disruption is likely to accompany cumulative short-term construction worker in-migration (particularly if a number of cumulative renewable facilities and other projects in the County are built simultaneously), there is insufficient evidence to predict the extent to which disruption is likely to persist beyond facility construction. The recommended additional mitigation strategies provided in Section 4.16 would reduce the REGPA's cumulative contribution to temporary housing demand and social disruption effects that may result from projects approved under the plan. Future CEQA analyses of projects that would fall under the REGPA would help in: a) identifying concurrent cumulative projects that would occur at the time a specific project is in application review; and b) any project-specific cumulative social disruption effects, and the associated mitigation to help offset those effects. Policy ED-4.6 of the REGPA encourages future developers to provide compensation in the form of reduced rates for communities in the County impacted by development.

The development of the cumulative projects in Inyo County that are identified in Table 5-1 are not expected to require large numbers of on-site operations and maintenance employees (including many of the "other projects" in Inyo County). Renewable energy facilities typically do not require a significant on-site workforce during operation. While minimal, it is assumed that some cumulative permanent in-migration would occur from specialized operations and maintenance workers to the County. Such cumulative growth is considered part of the County's growth projections presented in Section 4.16, Table 4.16-1.

The cumulative development of projects identified in Table 5-1 is not expected to reduce the County's ability to continue existing economic growth or attract various types of businesses. Other economic and demographic factors would play a stronger role in the continued economic development of the County. Given the overall rural nature of Inyo County, it is unlikely that cumulative renewable energy growth would be sufficient to cause established businesses to relocate because of the changes resulting from these projects. However, as discussed above, cumulative in-migration of temporary construction workers is expected to impact transient housing availability at some level, which could temporarily impact recreation-dependent businesses and tourism. While analysis of these potential adverse effects is speculative from a programmatic perspective, the implementation of proposed and additional mitigation strategies and policy directives of the REGPA would help reduce potential adverse cumulative effects of economic development in the County. Plan documents, by their nature, are intended to predict and mitigate for effects of growth and development on population.

Beneficial cumulative effects also would occur within the County from construction and operation of the projects and actions identified in Table 5-1 along with activities and projects under the REGPA. Workforce wages and spending during the construction and operation of cumulative development would be economic stimulators in the County. Other important public benefits include both short-term and long-term increases in local expenditures, payrolls, and sales tax revenues. These would positively affect the County's economy, provided compliance with the REGPA and Title 21. While the temporary in-migration of workers may cumulatively impact available transient housing, it is expected to cumulatively benefit a number of services and retail sectors due to worker spending. Additionally, Policy ED-4.7 of the REGPA encourages future solar developers to help provide transient housing during the construction of solar energy facilities to minimize impacts to transient housing.

5.1.3.17 Transportation and Circulation

The geographic scope for analyzing cumulative traffic impacts resulting from the proposed project is the County boundaries. Cumulative traffic impacts for individual projects are generally analyzed within the geographic context of the roadways and intersections in the vicinity of a specific project that may be directly or indirectly impacted by traffic generated by the project. However, because the locations of the SEDAs and the OVSA are dispersed throughout the County, the cumulative context for analyzing cumulative traffic impacts is the County as a whole.

As discussed in Section 4.17, the proposed project would not result in significant operational traffic impacts. Transportation activities during operations of future solar energy projects implemented under the proposed project would be limited to a small number of daily trips by personal vehicles and a few truck shipments. Given the small number of traffic trips generated by operations of solar energy projects, the associated increase in trips on local roadway and highways would not adversely impact the local transportation system or otherwise degrade LOS operations. Similarly, operational trips from the other cumulative projects would not be expected to substantially increase traffic on local roadways and highways for the same reasons. Therefore, cumulative long-term traffic impacts resulting from the proposed REGPA would not be significant.

The proposed project could result in potentially significant traffic impacts during the construction period for a particular solar energy project, as discussed in Section 4.17. Peak construction workforces for solar energy projects typically range from about 400 to 1,400 daily workers, with averages from about 100 to 400 or more workers over construction periods ranging from 2 to 4 years. Traffic trips generated by workers commuting to the solar energy project site for larger projects could degrade the LOS of a local roadway or highway. Mitigation is identified in Section 4.17 that would reduce construction-related traffic impacts to below a level of significance. Construction of planned solar energy and other cumulative projects (identified in Table 5-1), as well as construction of planned development in accordance with land use projections in the General Plan, could similarly result in short-term impacts to local roadways and highways, but those projects would also be required to implement mitigation to reduce construction-related traffic impacts to less than significant. With implementation of the identified mitigation measures, the proposed project's contribution to cumulative construction traffic impacts would not be significant.

Mitigation Measures

Implementation of the mitigation measures described in Section 4.17.5 (Mitigation Measures TRA-1 and TRA-2) would reduce the cumulative traffic impacts to below a level of significance.

5.1.3.18 Utilities

Depending on the location of cumulative projects, projects would tie into or construct a variety of wastewater treatment services, including existing systems in the Owens Valley, as well as community and individual septic systems. Each project would be required to comply with the requirements of the applicable land use agency to ensure adequate wastewater service for the site. For projects that would construct or connect with onsite wastewater treatment services, compliance with RWQCB requirements would be necessary. Due to the remote locations of the SEDAs, most future solar development projects occurring within the SEDAs are expected to be served by onsite wastewater treatment and would not connect to existing systems. Thus, the proposed Project would not contribute to cumulative impacts associated with existing wastewater treatment services.

Future solar development projects within the SEDAs would require water at varying usage, to be determined as part of the entitlement process for each project. Additionally, most of the cumulative projects would require water usage, whether temporary during construction, or for both construction and long-term usage at the site. Land management plans and conservation plans identified in cumulative projects would not require water usage. Water usage associated with future solar development projects within the SEDAs would contribute to a cumulatively considerable impact associated with water usage.

Each cumulative project, including future solar development projects within the SEDAs would require appropriate onsite stormwater drainage facilities. These facilities are identified during the project entitlement process. The construction of individual projects would not result in a cumulative impact associated with stormwater drainage, as each cumulative project would be required to construct appropriate stormwater drainage facilities on site. Cumulative impacts would be less than significant.

Solid waste disposal associated with future solar development projects within the SEDAs is expected to be minimal. Future solar development projects within the SEDAs would be required to comply with applicable federal, state, and local requirements, as would other cumulative projects occurring within the County. Although future solar development projects within the SEDAs are expected to result in minimal solid disposal needs, these projects, in combination with cumulative projects, would affect remaining capacities of existing landfills in the County, resulting in a cumulative impact.

5.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

According to State CEQA Guidelines Section 1526.2(b), an EIR must include a description of significant impacts, including those which can be mitigated but not reduced to below a level of significance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

In most cases, the identified impacts would be less than significant with implementation of the mitigation measures also contained in the table. Impacts that cannot be feasibly mitigated to a less than significant level would remain significant, unavoidable adverse impacts.

Significant and unavoidable impacts are discussed in detail in Section 4 and are described below:

5.2.1 Aesthetics

As described in Section 4.1, the proposed project would have significant and unavoidable impacts related to scenic vistas and scenic resources, degradation of the existing visual character of the site and its surroundings, and light and glare. As identified in Section 4.1, implementation of the proposed mitigation measures may lessen significant visual impacts, but the impacts would be considered significant and unavoidable.

The extent of aesthetics impacts from future solar development under the REGPA on scenic vistas and scenic resources would depend upon the location of those facilities in relation to those resources, and the characteristics of the solar energy technology being developed. Given the high quality of the visual resources present within the County and balancing the achievement of other criteria for the locations of the SEDAs, it is not possible to completely avoid impacts to areas having scenic qualities. The SEDAs contain BLM-managed lands with various BLM VRI classifications that rate the visual appeal of a tract of land, measure public concern for scenic quality, and determine whether the tract of land is visible from travel routes or observation points. Further, there are several public vantage points from areas outside the SEDAs with views into them. Solar energy projects developed within areas of a SEDA with BLM VRI Class I – III designations would introduce dominant visual elements that would substantially contrast with the existing visual environment. Further, depending on the size and nature of the solar energy infrastructure, visual changes within the SEDAs could be highly noticeable and substantial from public vantage points, which would visually disrupt the unity and intactness of the visual environment and degrade the visual character or quality of the site.

Lighting associated with diffuse reflected sunlight from solar power towers, and aircraft warning lights on power and transmission towers, and glare from reflective surfaces of PV panels and solar thermal mirrors would result in significant visual impacts. As previously mentioned, it is not possible to completely avoid all areas that have scenic and visual qualities. As a result, although implementation of the proposed mitigation measures (AES-1 through AES-10) may lessen the effects of the visual impacts from solar developments, the impacts would not be reduced to below a level of significance and would remain significant and unavoidable.

5.2.2 Biological Resources

As described in Section 4.4, generally speaking, the proposed project would have significant and unavoidable impacts related to biological resources. The extent of impacts, and the biological resources affected would depend on the location of future solar development under the REGPA and the characteristics of the solar energy technology being developed. The SEDAs and OVSA contain diverse landscapes that support a variety of sensitive habitats and special status species. As identified in Section 4.4, with implementation of the issue-specific mitigation measures, in some cases the impacts to biological resources would be able to be reduced to below a level of significance. However, due to the programmatic level analysis of this PEIR, actual impacts to those resources and the likelihood that the mitigation measures will reduce those impacts to below of level of significance is not certain. Therefore, impacts to biological resources are considered significant and unavoidable. The solar energy projects developed under the REGPA, combined with the identified cumulative projects, would also s contribute to impacts to biological resources. During future project-level analyses, mitigation measures will be developed to offset impacts to a project site's resources. In some cases, depending on the type of project, nature of the resource, and type of mitigation proposed, less than significant impacts may be achieved with mitigation in place.

Mitigation Measure BIO-1 requires project level biological resource evaluation and development of a biological resources mitigation and monitoring plan. This process will identify biological resources and impacts to those resources at the project level, and will identify the appropriate measures to avoid, minimize or mitigate for impacts to those resources based on the characteristics of the solar project being developed.

Implementation of the REGPA has the potential to result in significant impacts to sensitive natural communities, impacts to rare plants, and special status wildlife including species of fish, amphibians, reptiles, birds, and mammals, federally protected wetlands as defined by Section 404 of the CWA, impacts to movement or migratory corridors or native wildlife nursery sites, impacts due to the spread of invasive plant species or noxious weeds, and impacts to groundwater dependent vegetation. Mitigation Measures BIO-2 contains measures to avoid and minimize impacts on rare plants. Mitigation Measures BIO-3 through BIO-18 contain general and species specific measures to avoid and minimize impacts to wildlife. Mitigation Measure MIO-19 contains measures to avoid, minimize, and mitigate for impacts to special status natural communities and protected natural areas. Mitigation Measure BIO-20 contains measures to avoid, minimize, and mitigate for impacts to waters of the US/State, including wetlands. Mitigation Measure BIO-21 contains measures to avoid impacts to movement or migratory corridors or native wildlife nursery sites. Mitigation Measure BIO-22 contains measures to prevent the introduction and spread of invasive plant species and noxious weeds. Mitigation Measure BIO-23 contains general design guidelines to minimize impacts to biological resources, and Mitigation Measure BIO-24 contains measures to avoid and minimize impacts on groundwater dependent vegetation. With implementation of the appropriate measures in future project level analysis, impacts to these resources may be reduced to a less than significant impact.

Implementation of the REGPA would result in significant and unavoidable impacts to birds from solar flux (solar flux associated with solar power tower development) and luminosity associated with solar thermal power towers, and collision associated with utility scale solar energy projects. The County is located along the Pacific Flyway, and contains Important Bird Areas. In particular, the Owens Valley and Owens Lake are important stopovers for migratory birds along the Pacific Flyway. Future solar projects in the Western Solar Energy Group in consideration of additional solar and wind projects along the Pacific Flyway in San Bernardino and Kern County have the potential to cumulatively impact migratory birds by collision. Depending on the technology used, there may also be cumulative impacts to birds from solar flux and luminosity. Currently, there is no mitigation for these impacts. The proposed solar facility development projects would incorporate measures to minimize the likeliness of impacts to birds from solar flux, luminosity, and collisions through particular siting requirements. This is considered a significant and unavoidable cumulative impact.

5.2.3 Cultural Resources

As described in Section 4.5, the proposed project would have significant and unavoidable impacts related to cultural resources. The extent of impacts, and the historical and architectural resources affected would depend on the location of future solar development under the REGPA and the characteristics of the solar energy technology being developed. Mitigation Measures CUL-1a through CUL-1g and CUL-3a will be applied to reduce these impacts; however, while significant adverse effects to some impacted cultural resources will be mitigated to less than significant by these measures, impacts to other resources may remain significant, unavoidable, and unmitigable. Additional avoidance and mitigation strategies for individual resources will be applied in the second-tier, project-level analyses. In some cases, depending on the type of project, nature of the resource, and type of mitigation proposed, less significant impacts may be possible. However, at the programmatic level of analysis, impacts to cultural resources are considered significant and unavoidable.

5.3 SIGNIFICANT IRREVERSIBLE CHANGES

According to Section 15126(c) of the State CEQA Guidelines, an EIR must include an evaluation of significant irreversible environmental changes that would likely occur should the proposed project be implemented. Examples of irreversible changes identified in Section 15126.2(c) of the State CEQA Guidelines include: (1) the use of substantial amounts of nonrenewable resources (e.g., energy and mineral resources); (2) primary and secondary impacts that commit future generations to a particular use of the land; and (3) irreversible damage that could be caused by environmental accidents associated with a project. Irretrievable commitments of resources are evaluated to assure that current consumption is justified.

5.3.1 Consumption of Non-Renewable Resources

Resources, including land, energy, water, and construction materials would be committed for the project's initial construction, infrastructure installation, and connection to existing utilities and its continued maintenance. Construction of the project would require the commitment of a variety of non-renewable or slowly renewable resources including sand and gravel, asphalt, oil and gas, and metals. These resources would be committed for the duration of the operation of the solar facility. These energy demands relate to initial project construction, project operation, and on-going maintenance, as well as the transport of people and materials and/or equipment to and from the project site.

5.3.2 Changes in Land Use Which Commit Future Generations

Implementation of the proposed project would result in the conversion of up to 5,400 acres of undeveloped or underutilized land in the SEDAs and OVSA to solar facilities. Solar projects are developed with a projected life span, with decommissioning and reclamation plans developed for implementation at the end of the facility operation. Therefore, future solar projects under the REGPA would not commit future generations to a particular use of the land.

5.3.3 Irreversible Damage from Environmental Accidents

Depending on the nature and extent of solar facilities and operations, the transport, use/storage and disposal of hazardous materials may be required, potentially including substances such as fuels, hydraulic and dielectric[1] fluids, oil and grease, cleaning solutions/solvents, and storage batteries. Accidental spills of these materials may occur during construction and operation of the facilities. The use of these materials would be subject to applicable federal, state, and local regulatory requirements (refer to Section 4.8.1.), and would be overseen by experienced workers. Required conformance with hazardous material regulatory standards, regardless of the ultimate nature and extent of solar development/operation, would address associated issues related to public and environmental hazards through efforts such as implementation of. Based on mandatory conformance with associated regulatory standards as described, including implementation of approved HMBEPs, RMPs and related efforts (e.g., proper inventory documentation, storage/containment, transport, employee training, and spill response/clean-up measures), potential spills would not result in irreversible environmental changes.

5.4 GROWTH INDUCING EFFECTS

Section 15126.2(d) of the State CEQA Guidelines requires a discussion of the ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Projects that would remove obstacles to population growth are included. Examples of these types of actions include: (1) a major expansion of a waste water treatment plant that would allow for more development within its service area; and (2) actions that could encourage and facilitate “other activities” that could significantly affect the environment. Typically, the latter issue involves the potential for a project to induce further growth by the expansion or extension of existing services, utilities, or infrastructure. The State CEQA Guidelines further state that “[i]t must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment” (Section 15126.2(d)).

Typically, the growth inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans,

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[1] Dielectric fluids are typically used for thermal insulation, and may include substances such as various oils and glycerol.

land use plans, or in projections made by regional planning agencies. Significant growth impacts also could occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies.

In general, growth inducement by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

The proposed REGPA would not result in the construction of additional housing, but could result in indirect population growth if it required the construction of housing for workers associated with future solar energy development projects. The proposed REGPA would require temporary workforces associated with the construction of future solar energy developments and transmission lines. Construction workers would likely travel to different areas of the County to work on construction of such projects. The proposed REGPA includes a new Economic Development Element policy (Policy ED-4.5) that encourages renewable energy solar facility developers to employ the local labor force, during development and for long-term facility maintenance and provide educational and training opportunities, as practicable. It is expected that much of the temporary construction work force would originate in Inyo County, although some workers would likely come from out of the County. However, as discussed in Section 3.13, there is adequate temporary housing available in the County (and in the neighboring communities of Pahrump, Nevada and Ridgecrest, California) for workers associated with future solar development projects, and the REGPA and future solar development projects within the SEDAs would not require the construction of housing for temporary construction workers. Future solar development projects would have minor long-term employment needs associated with management, monitoring, and maintenance of the facilities. These employment needs may be meet from workers already residing in the County or from workers relocating to the County on a permanent basis, or a combination thereof. However, the small number of jobs that would be generated on a long-term basis is expected to be low and would not result in a substantial increase in population for the County. With a County-wide vacancy rate of approximately 15 percent, existing housing is available for the small number of workers that could potentially relocate to Inyo County.

The proposed REGPA and future solar development projects within the SEDAs would not result in the extension of water or wastewater services to previously unserved areas, as future development projects would likely be required to provide individual wells and onsite septic systems to handle water and wastewater needs. Construction of future solar development projects in the Southern and Eastern Solar Energy Groups would require new transmission lines to areas either previously unserved or to areas that only contain lines for local distribution. The provision of transmission lines to these relatively undeveloped portions of the County is an extension of utility services to previously unserved areas. The transmission of electricity to new areas of the County could be considered growth inducing.

Although construction of future solar development projects and associated transmission lines would contribute to the energy supply, which, in turn, supports growth, the development of power infrastructure is a response to increased market demand and a goal to offset or reduce existing consumption of non-renewable energy. Energy produced would contribute to the overall energy supply in the state required to meet projected growth. The additional energy would be used to meet existing and projected energy demands within the County and beyond.

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6.0 PROJECT ALTERNATIVES

6.1 RATIONALE FOR ALTERNATIVE SELECTION

Pursuant to Section 15126.6(a) of the State CEQA Guidelines, this section discusses five alternatives to the proposed project that could feasibly accomplish a majority of the proposed project objectives. This section also describes alternatives that were considered, but rejected from further study. The environmental assessment provided in this section will enable the County to exercise greater discretion in its decisions regarding whether to approve the project as proposed, to approve a project with changes such as those described in the following alternatives, or to reject the proposed project or any alternatives at this time.

Section 15126(f) states that "the range of alternatives in an EIR is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." The State CEQA Guidelines provide several factors that should be considered in regard to the feasibility of an alternative; those factors include: (1) site suitability; (2) economic viability; (3) availability of infrastructure; (4) general plan consistency; (5) other plans or regulatory limitations; (6) jurisdictional boundaries (projects with a reasonably significant impact should consider the regional context); and, (7) whether the project applicant can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).

The rationale for and characteristics of each of the alternatives addressed are described below, followed by a comparison of the environmental effects associated with the proposed project versus each alternative. Note that the comparison of environmental effects focuses on the same environmental topic areas addressed in Sections 4.1 through 4.18 in this PEIR. Following the comparative analysis of each alternative versus the proposed project, the environmentally superior alternative is identified. The project alternatives selected for evaluation include:

1. No Project Alternative
2. Solar PV Only Alternative (no solar thermal)
3. Distributed Generation Only Alternative (less than 20 MW)
4. Reduced SEDA Alternative (Elimination of the Laws, Rose Valley, Pearsonville and Chicago Valley SEDAs)
5. Solar Energy Development on Previously Disturbed Lands Only Alternative

6.2 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER STUDY

State CEQA Guideline 15126.6(c) requires that an EIR identify alternatives that were considered and rejected as infeasible, and briefly explain the reasons for their rejection. Alternatives considered but rejected from further study include: (1) 2011 Renewable Energy Development Areas (REDAs) Alternative and (2) 2013 REDAs (more intensive version of 2011 REDAs).

6.2.1 2011 Renewable Energy Development Areas Alternative

The 2011 REDAs included 15 REDAs that would have allowed development of solar and wind energy projects. The 15 REDAs included the following areas: Fish Lake Valley, Deep Springs, Laws, Owens Valley, Owens Lake and Keeler, Centennial Flat, Rose Valley, Pearsonville, Panamint Valley, Trona, Death Valley Junction, Chicago Valley, Charleston View, Tecopa, and Sandy Valley. The 2011 REDAs would have restricted the potential for renewable energy to about 15 percent of the County. The areas were identified with criteria that were based on site specific studies, environmental review, and permitting requirements pursuant to the Renewable Energy Ordinance and other applicable State, federal and local laws. Because the 2011 REGPA was challenged by environmental groups due to lack of CEQA compliance, it was rescinded and the 2011 REDAs were not carried forward.

6.2.2 2013 Renewable Energy Development Areas Alternative

In 2013, the County reviewed the 2011 REDAs and proposed revised areas (SEDAs) for consideration in this REGPA PEIR. The primary difference between the 2013 and 2011 REDAs was a reduction in area available for renewable development in the Owens Valley and Chicago Valley and an increase in area available for renewable development in Rose Valley and Trona. The County presented the potential 2013 REDAs to the public for consideration and held several meetings to discuss the REDAs. The public expressed concerns regarding both the extent of the REDAs and the inclusion of wind energy in the REGPA due to the significant visual impacts of this technology. The DOD also expressed concern about the potential impact to military readiness and training operations resulting from implementation of wind projects. As a result of this input, the County revised the 2013 REDAs to reduce both the total footprint of the REDAs and to eliminate the consideration of wind energy. As part of this process, the County eliminated consideration of the following REDAs: Fish Lake Valley, Deep Springs, Centennial Flats/Darwin, Panamint Valley, Death Valley Junction, and Tecopa from the proposed project carried forward for consideration. Additional planning will be undertaken for the Owens Valley separately. Because of the potential significant environmental impacts and public concern regarding the Owens Valley, this alternative was eliminated from consideration in the PEIR.

6.3 ALTERNATIVES CONSIDERED FOR EVALUATION

The following alternatives are presented to foster informed decision making and public participation. The primary differences between the alternatives are the size, location, and type of solar development.

The impacts of solar development for each of the alternatives are largely similar to those of the proposed project because the types of construction equipment and construction and operation activities are similar. Therefore the types of air emissions, noise levels, and impacts to sensitive receptors and services would be similar to the proposed project. If fewer or smaller projects are built resulting in less ground disturbance, as might be the case with the Distributed Generation Only Alternative, these impacts would be incrementally reduced, but not necessarily eliminated. Because of the similarity (other than the scale of the impacts) among the alternatives, the following resources are not addressed in detail:

- Agricultural Resources
- Air Quality
- Geology and Soils
- Land Use
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Circulation
- Utilities

6.3.1 No Project Alternative

The No Project Alternative is required under Section 15126.6(e) of the State CEQA Guidelines and represents a possible scenario that could occur if the proposed REGPA was not approved. According to Section 15126.6 (e)(3)(A) of the State CEQA Guidelines, when the project is the revision of an existing land use plan or regulatory plan, policy or ongoing operation, the "no project" alternative would be the continuation of the existing plan, policy or operation into the future. Therefore, under the No Project Alternative, the County would process proposed renewable energy project applications countywide without the benefit of the policy framework provided by the REGPA. Significant portions of the County could be impacted by the development of solar and/or wind energy projects (all of which would be subject to CEQA review). The County would be limited in its ability to discourage project applicants from submitting renewable energy development proposals due to lacking regulatory guidance on the location, siting and size of such projects. Additionally, the County would not set a MW cap on the amount of renewable energy development.

The No Project Alternative would not fulfill the majority of the project objectives as described in Section 4.2 because it would not regulate the size, capacity and impacts of solar energy development projects and could result in development of large swaths of undisturbed lands outside of the identified SEDAs.

The primary differences between the No Project Alternative and the proposed projects are discussed below.

6.3.1.1 Aesthetics

Aesthetics impacts associated with the No Project Alternative would be similar to the proposed project in that the types of activities associated with the development of renewable energy that could be permitted under the No Project Alternative would be similar to the proposed project. However, under the No Project Alternative, renewable projects could be built anywhere in the County that is not currently legally or technically restricted. This includes areas not available to renewable energy under the proposed project such as throughout the Owens Valley or in the Panamint Valley. These locations have been identified by the public and by the analysis as visually sensitive so renewable energy development would potentially result in more wide-ranging impacts to visual resources when compared with the proposed project.

Under the No Project Alternative, there would be no restriction on the type of renewable energy projects that are constructed. Wind energy facilities could conceivably be constructed anywhere in the County that is not currently legally restricted. Wind energy projects would likely be focused along portions of the US 395 and in the Death Valley Junction where the potential to harness wind energy is fair to excellent. Because wind turbines are generally several hundred feet tall, they are highly visible from far distances similar to solar power tower facilities. Due to the height of wind farms, they are required to use night lighting as a warning system for pilots thereby increasing their visual impacts, in general, and resulting in impacts to night skies.

If projects are permitted under the No Project Alternative, there could be greater impacts to visual resources when compared to the proposed project because under the No Project Alternative, solar energy development could occur in more areas throughout the County and would allow for the development of more wind energy.

6.3.1.2 Biological Resources

If solar energy projects are permitted under the No Project Alternative, the impacts to biological resources associated with the No Project Alternative have the potential to be greater than those described for the proposed project. The proposed project has selected the SEDAs as areas containing less sensitive biological resources when compared with other potentially developable areas of the County and may develop restrictions and criteria for development in the OVSA, which is a biologically rich area of the County, based on further analysis. The REGPA contains policies and implementation measures to encourage development within the SEDAs on lands that have been previously developed or disturbed, and along existing transmission lines (Section 3.3.3), thereby potentially minimizing impacts to biological resources.

Under the No Project Alternative, if approved, renewable projects could be built anywhere in the County that is not currently legally restricted. Wind energy projects would likely be focused along the east slope of the Sierra Nevada, near Pearsonville along US 395, and along the peaks of the Panamint Range, the Amargosa Range, and the Funeral Mountains (Aspen 2014). Wind energy developments require larger areas of development per MW produced when compared with solar developments – wind developments require 22 acres per MW to 247 acres per MW (Denholm et al. 2009) compared with approximately 6 acres per MW required for solar developments (see Table 3-2 in Section 3.3.6.1). Additionally, this alternative would not constrain renewable energy development by acreage as is the case under the REGPA. At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to biological resources. However, based on the lack of regulations dictating the maximum utility scale renewable energy developments in the County, restrictions to the potential locations of those developments, and the possibility of greater land requirements for wind energy developments under the No Project Alternative, if such developments are approved, the No Project Alternative would likely result in greater impacts to biological resources when compared with the proposed REGPA.

6.3.1.3 Cultural Resources

The impacts to cultural resources associated with the No Project Alternative would have a potentially significant effect on cultural resources when viewed programmatically. Additional avoidance and mitigation strategies will be applied in the second-tier, project-level analyses under both the proposed and No Project Alternatives, however, cultural resources would likely still be adversely affected as part of renewable energy projects. The No Project Alternative would not constrain solar development by acreage and could impact a higher number of cultural resources, including cultural landscapes, during development of previously undisturbed lands. At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to these resources. Mitigation Measures CUL-1a through CUL-1g and CUL-3a for the proposed REGPA would not be applied under this alternative and, therefore, impacts to cultural resources would not be reduced and this impact would remain significant and unavoidable. Therefore, if renewable energy projects are approved under the No Project Alternative, depending on the number and location of projects approved, the No Project Alternative could have a greater impact to cultural resources than the proposed project at the programmatic level.

6.3.1.4 Greenhouse Gas Emissions

The No Project Alternative could result in similar impacts due to GHG emissions as under the proposed project depending on the number and size of the projects approved. The proposed project would cap the total allowable energy generation capacity in the SEDAs at 900 MW of electricity. The No Project Alternative would not have a MW cap so, depending on market conditions, more projects than anticipated under the proposed REGPA could be approved and built. The types of construction and operation impacts would be similar because the construction and operational activities would be similar, however, overall construction and operational emissions under the No Project Alternatives could be greater as a result of more acres of development. On the other hand, an increase in MW produced under the No Project Alternative would result in an increase in GHG emission offsets when compared with the proposed project. Depending on the MW of electricity produced, the No Project Alternative could result in a greater beneficial impact on GHG (lesser impact) than the proposed project at the programmatic level.

6.3.1.5 Hazards and Hazardous Materials

The No Project Alternative would result in similar impacts due to the use of hazardous materials as under the proposed project depending on the number and size of the projects approved. This is because the types of hazardous materials (fuels, hydraulic and dielectric fluids, oil and grease, cleaning solutions/solvents, and storage batteries) used in the proposed project would be similar to the types of hazardous materials used for renewable development under the No Project Alternative. Standard measures would be required to reduce the potential spill of any hazardous materials and the developers would be required to incorporate spill prevention plans into their construction and operation.

Because the No Project Alternative would allow the development of wind energy, some additional hazards and hazardous materials would be considered. The FAA regulations establish standards for determining obstructions in navigable airspace, including height limitations on structures taller than 200 feet or within 20,000 feet (approximately 3.8 miles) of an airport. (14 CFR, Part 77). The FAA requires that it be notified of these types of structures through the filing of FAA Form 7460 1 (Notice of Proposed Construction or Alteration). Many wind turbines are taller than 200 feet and would trigger filing of FAA Form 7460 1.

Filing a Form 7460 1 allows the FAA to conduct an aeronautical study to ascertain whether the proposed structure would present a hazard to air navigation or could negatively impact the operational procedures of a nearby airport. The FAA then makes its recommendations, determining whether: (1) the proposed structure constitutes a hazard to air navigation; (2) the proposed structure would not constitute a hazard if the structure is marked and/or lit; or (3) the proposed structure is not a hazard even in the absence of marking or lighting. Because the No Project Alternative would allow construction of wind energy, it would potentially pose a navigational hazard.

In addition, wind turbines can catch fire from excessive braking system friction, lightning strikes, electrical malfunctions, and flammable components. Fires at the top of the turbines are difficult to extinguish as fire truck ladders are too short to reach them. This can cause fires to spread to adjacent areas increasing the risk of wildfire. Because wind energy is not included in the proposed project, the No Project Alternative would include it, which would present an increased type of wildlife hazard, although, wind energy facility operators implement standard practices to reduce this risk accordingly. Overall impacts would remain similar to the proposed project.

6.3.1.6 Hydrology and Water Quality

The No Project Alternative would result in impacts associated with hydrology and water quality that would be similar to those described for the proposed project depending on the number and size of the projects approved. This includes impacts to drainage patterns and flow directions, runoff rates, flooding, existing or planned storm drainage system capacity, groundwater supplies and recharge, and impacts to water quality.

The No Project Alternative would not have a MW cap so, depending on market conditions, more projects than anticipated under the proposed project could be approved and built. If more projects were constructed under the No Project Alternative compared with the proposed project, this would result in a greater degree of impacts to hydrology and water quality.

6.3.1.7 Socioeconomics

Similar to the proposed project, socioeconomic impacts may occur if the influx of workers, both short and long term, exceeds the expected growth of the County and adversely impacts the amount of available temporary housing, and public service levels. Because the No Project Alternative would not cap the total allowable utility scale solar energy development in the County, the overall potential for temporary worker in-migration could be greater than that of the proposed project. Depending upon the conditions of approval placed upon large solar energy projects, the No Project Alternative might not allow for planning of large solar energy projects to provide for sufficient transient housing and sharing of specialized workers. Additionally, local recreational resource providers would have less ability to plan for any transient housing shortages resulting from construction worker in-migration. Types of beneficial long-term fiscal and job growth effects would be similar to the proposed project. Therefore, depending on the number and size of the projects approved, the No Project Alternative might have a greater potential for adverse socioeconomic effects and similar beneficial effects when compared to the proposed project.

6.3.2 Solar Photovoltaic Only Alternative

The Solar PV Only Alternative would provide for solar PV projects to be implemented within the eight proposed SEDAs; no solar thermal projects, solar trough, and/or solar power tower, would be allowed within the County. Distributed generation would still be supported within the County. Selection of this alternative would remove the more controversial types of solar energy projects from consideration; solar thermal applications would be denied by the County outright. Because this alternative would continue to allow solar PV development in the proposed SEDAs, it would meet the project objectives outlined in Section 4.2 of the PEIR. However, solar thermal projects could be processed by other agencies.

This alternative would likely result in slightly less impacts to aesthetics, biological resources, and cultural resources, although it would not reduce the impacts to below a level of significance. It is difficult to determine if socioeconomic impacts to the County would be lessened through exclusion of solar thermal projects. Solar thermal projects may require specialized workers during construction and operations due to the complexity of the technology. Therefore, potentially beneficial economic impacts of this alternative may be slightly reduced. However, the overall socioeconomic impacts would likely be similar to the proposed project.

The primarily differences between the Solar PV Only Alternative and the proposed projects are discussed below.

6.3.2.1 Aesthetics

Aesthetic impacts associated with the Solar PV Only Alternative would be similar to those described for the proposed project in Section 4.1; however, the operational aesthetic impacts would be limited to those described for PV facilities. This would limit the height structures of the solar panels themselves to 30 feet as compared with solar thermal technologies that can include structures up to 750 feet tall. As noted for the proposed project, PV arrays are comprised of low-profile elements, and do not result in dominant vertical massing effects. However, because of the potential size of the PV facilities, up to several thousand acres, they create a large-scale dominant visual feature that covers large areas of relatively flat land. While the Solar PV Only Alternative would reduce the aesthetic impacts compared with the proposed project, future PV projects would still introduce visual features that substantially contrast with, and degrade the existing visual character or quality of the site and its surroundings, resulting in significant and unmitigated visual impacts.

6.3.2.2 Biological Resources

The Solar PV Only Alternative would result in slightly reduced impacts to biological resources from those described for the proposed project. Most impacts to biological resources would be similar to those identified in Section 4.4 of this PEIR; however, solar thermal power tower facilities that could be constructed under the proposed project result in significant impacts that would not occur or would be reduced if solar development was limited to solar PV only. The scale of the impacts generally increases with the size of the solar thermal power tower facility.

Solar thermal power tower facilities result in significant and unavoidable impacts to birds from solar flux and luminosity between the tower and the heliostats. Solar PV technology does not produce solar flux or luminosity; therefore, these impacts would be eliminated under the Solar PV Only Alternative. Further, solar thermal power tower facilities contain tall structures – the towers may reach hundreds of feet in height. These tall structures increase the chances for bird collisions and provide opportunities for perching and nesting; thereby increasing opportunities for impacts related to solar flux, luminosity, and collisions. Solar PV technologies contain relatively low profile facilities which would be expected to result in reduced impacts from collisions with tall structures, although there is still the risk of collisions and increased predation associated with polarized light pollution. Blowdown and evaporation ponds are part of solar thermal facilities that are not required for solar PV facilities. These ponds may also impact birds by attracting them to the area and increasing the chances of impacts from solar flux, luminosity, and collision. The Solar PV Only Alternative would result in reduced impacts to birds from collisions and solar flux when compared with the risk associated with solar thermal power tower facilities of similar size and location.

As described above in the discussion regarding "Hydrology and Water Quality," solar thermal technologies require more water use when compared with solar PV facilities. The reduced impacts to groundwater supplies and recharge of the Solar PV Only Alternative compared with the proposed project would reduce impacts to groundwater dependent habitats, although likely not below a level of significance without mitigation.

6.3.2.3 Cultural Resources

The impacts to cultural resources associated with the Solar PV Only Alternative would have a potentially significant effect on cultural resources when viewed programmatically. If solar development was limited to solar PV only, impacts to cultural resources from deep ground-disturbance activities might be reduced and visual impacts to the integrity of setting and feeling of cultural resources would also likely be reduced. However, some cultural resources, including cultural landscapes, would be adversely affected as part of solar PV projects and any reduction in impacts would not be sufficient to be considered less than significant as even without taller structures, large-scale solar PV facilities can be viewed at far distances given the topography of the County. At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to these resources. Because of this uncertainty, at the programmatic level of analysis the impact is considered significant and unavoidable. Mitigation Measures CUL-1a through CUL-1g and CUL-3a would be applied under the Solar PV Only Alternative and therefore would reduce affects to cultural resources. This alternative would likely have a lesser impact to cultural resources than the proposed project at the programmatic level because of the reduced size and scale of the projects, but not to less than significant levels.

6.3.2.4 Greenhouse Gas Emissions

The Solar PV Only Alternative would result in similar impacts due to GHG emissions as the proposed project. The types of construction and operation emissions would be similar because the construction and operational activities would be similar. The exact offset of the proposed project and Solar PV Only Alternative are not known; however, solar thermal projects generally involve additional combustion of natural gas and are expected to result in additional GHG emissions impacts during operations compared with solar PV. Solar thermal technologies frequently generate more megawatt hours per MW of capacity compared with solar PV projects because they are able to produce energy for longer periods during a day. Overall, the offset of the proposed projects and Solar PV Only Alternative would be expected to be similar.

6.3.2.5 Hazards and Hazardous Materials

The Solar PV Only Alternative would result in slightly reduced impacts due to hazardous materials compared with the proposed project. This is because while the types of hazardous materials (fuels, hydraulic and dielectric fluids, oil and grease, cleaning solutions/solvents, and storage batteries) used in the construction would be similar, solar PV projects do not include heat transfer fluids, thermal energy storage (TES) salts, and steam amendment chemicals that are components of some solar thermal technologies. Much of this waste will have recycling options, but subsequent flushing (with water or appropriate organic solvents) and cleaning of the systems will generate wastes that require disposal. The heat transfer fluids most commonly used are Therminol and Dowtherm. Therminol is an ethylated benzene compound with relatively low volatility at ambient temperatures. It has a low oral and inhalation toxicity (Solutia Inc. 2006) but is irritating to the skin. Dowtherm is primarily ethylene glycol, a common antifreeze. It also has a low volatility at ambient temperatures, low inhalation toxicity, and moderate oral toxicity; brief skin contact is nonirritating (Dow Chemical Inc. 2004). Because the proposed project could require use of additional hazardous materials not required for solar PV technologies, the impacts to hazards and hazardous materials would be slightly reduced for the Solar PV Only Alternative. However, with implementation of BMPs and standard mitigation requirements, the impacts of both would be less than significant with mitigation.

The Solar PV Only Alternative would also result in placement of fewer structures such as towers within airport hazard zones so would reduce potential impacts to airport-related hazards. Glare from solar energy facilities (i.e., the sun's reflection off mirrors or PV panels) could interfere with pilot vision as was reported in 2013 by two flight crews in the vicinity of the Ivanpah Solar Electric General System.

6.3.2.6 Hydrology and Water Quality

The Solar PV Only Alternative would result in impacts associated with hydrology and water quality that would be similar in nature to those described for the proposed project. This includes impacts to drainage patterns and flow directions, runoff rates, flooding, existing or planned storm drainage system capacity, groundwater supplies and recharge, and impacts to water quality.

The Solar PV Only Alternative would require only minimal water during operations. Solar thermal technologies require additional water during operations even with implementation of dry cooling technology. As such, the Solar PV Only Alternative would result in reduced impacts to groundwater supplies and recharge compared with the proposed project, although likely not below a level of significance without mitigation.

6.3.2.7 Socioeconomics

This alternative would only allow for solar PV projects to be implemented within the eight proposed SEDAs; no solar thermal projects would be allowed within the County. Overall, this alternative would result in similar socioeconomic effects to the proposed project. In general, utility scale solar PV and solar thermal projects would require similar numbers of needed temporary workers. However, solar thermal projects typically require additional specialized workers during construction and operation due to complexity and variations of this technology. Also, depending on the method used for maintaining solar reflector mirrors, solar thermal projects may also require slightly more operational workers. Beneficial long-term fiscal and job growth affects would be similar to the proposed project. Therefore, while similar, the overall potential for temporary worker in-migration may be slightly reduced under this alternative when compared to the proposed project, because the potential for solar thermal projects to be developed within the County would be eliminated.

6.3.3 Distributed Generation Only Alternative

The Distributed Generation Only Alternative would result in continued County support for distributed generation for solar energy projects ranging from 1 to 20 MW. No SEDAs are proposed under this alternative. Under this alternative, applications for projects over 20 MW would be denied outright by the County, effectively prohibiting the construction and operation of solar energy projects greater than 20 MW within the County's jurisdiction. Because solar thermal projects are generally constructed at utility scale, this alternative would likely limit future development of solar thermal technologies in the near term.

Implementation of the Distributed Generation Only Alternative would not meet all of the project objectives outlined in Section 4.2 of the PEIR as this alternative would be less supportive of the State's goal of reduced reliance on petroleum-based energy sources in favor of renewable energy sources. Utility scale projects could still be processed by other land management agencies. The MW and acreage development caps identified for the proposed project would be followed for the Distributed Generation Only alternative. This alternative would result in fewer impacts to all environmental topic areas analyzed in the PEIR, and likely to below a level of significance. The socioeconomic effects of the Distributed Generation Only Alternative would likely be neutral: the County would neither benefit from nor be negatively affected financially by implementation of this alternative. When compared to utility scale projects, solar facilities less than 20 MW would require a smaller construction workforce so there would be a reduction in local economic benefits from this alternative compared with the proposed project.

The primarily differences between the Distributed Generation Only Alternative and the proposed projects are discussed below.

6.3.3.1 Aesthetics

Aesthetic impacts associated with the Distributed Generation Only Alternative would be similar to those described for the proposed project in Section 4.1, although at a smaller scale. Distributed generation projects would be up to 20 MW in size so would likely be less than 150 acres. The operational aesthetic impacts would be limited primarily to those described for

PV facilities. This would limit the height structures of the solar panels themselves to 30 feet as compared with solar thermal technologies that can include structures up to 750 feet tall. Because the Distributed Generation Only Alternative would not be limited to SEDAs, the projects could be constructed throughout the entire County. This includes areas not available to renewable energy under the Proposed Project such as throughout the Owens Valley or in the Panamint Valley. These locations have been identified by the public and by the analysis as visually sensitive so would result in greater impacts to visual resources when compared with the proposed project. A greater number of projects could also result in more intertie facilities across the landscape.

As noted for the proposed project, PV arrays are comprised of low-profile elements, and do not result in dominant vertical massing effects. However, because a distributed generation project could be as large as 150 acres, they could still create a large-scale dominant visual feature that covers large areas of relatively flat land. This visual impact would be greatly reduced when compared with the proposed project but would still introduce visual features that substantially contrast with, and degrade the existing visual character or quality of the site and its surroundings. In many instances, the distributed generation projects could be sited to reduce visual impacts to less than significant. However, depending on the size and location of the distributed generation project and the nearby sensitive viewers, a 20-MW distributed generation project could result in significant visual impacts.

6.3.3.2 Biological Resources

The Distributed Generation Only Alternative would not include solar thermal technologies; therefore, significant and unavoidable impacts to birds from solar flux and luminosity associated with solar thermal power towers that could be developed under the proposed project would be eliminated. Significant and unavoidable impacts to birds from collisions with solar thermal power towers would be reduced, and potentially significant impacts to groundwater dependent habitats and their species would be reduced as described above under the Solar PV Only Alternative. Like solar thermal facilities, solar PV facilities may result in impacts to birds resulting from collisions with solar panels. However, the size and continuity of the panels may contribute to the likeliness for collisions from birds. It is likely that utility scale facilities will see greater numbers of birds colliding with solar panels when compared with smaller scale facilities, as would be constructed under the Distributed Generation Only Alternative, and the significant and unavoidable impact to birds from utility scale facilities would be reduced, although they may not be able to be reduced to a level of less than significant.

Additional impacts would be similar to those described under the proposed project; however, reducing the construction and operation of solar energy projects to less than 20 MW would likely reduce the area used to construct such projects resulting in reduced physical impacts to special status species and their habitats within the project footprint. Further, distributed generation facilities may be constructed within urban environments or existing structures, which could reduce the amount of undisturbed or undeveloped habitat being converted to solar facility development. It is unknown whether the Distributed Generation Only Alternative would achieve 900 MW of projects; therefore, overall impacts to the physical environment may be reduced by the smaller developments and developments on existing structures and disturbed environments as described above.

6.3.3.3 Cultural Resources

The impacts to cultural resources associated with the Distributed Generation Only Alternative would have a potentially significant effect on cultural resources when viewed programmatically. Reducing the construction and operation of solar energy projects to less than 20 MW would likely reduce the area used to construct such projects and thus reduce physical impacts on cultural resources. It is also likely that the smaller footprint of these projects would cause fewer visual impacts to the integrities of setting and feeling of cultural resources. However, because the projects would not be limited to SEDAs, the distributed nature of this alternative may result in a greater number of projects being constructed in wider geographic areas, impacting more cultural resources, including cultural landscapes, physically and visually.

Distributed generation built within urban environments or on elements of the built environment may have a greater impact on the integrity of design, setting, materials, workmanship, or feeling of historical resources, particularly buildings over 50 years old. With appropriate project specific mitigation measures, the impacts to historic period buildings could be reduced to a less than significant level. However, at the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to these resources. Because of this uncertainty, at the programmatic level of analysis the impact is considered significant and unavoidable. Mitigation Measures CUL-1a through CUL-1g and CUL-3a would be applied under the Distributed Generation Only Alternative and therefore would reduce effects to cultural resources. With implementation of mitigation measures, the Distributed Generation Only Alternative would likely have a lesser impact to cultural resources than the proposed project at the programmatic level because of the reduced size and scale of the projects, but potentially not to a less than significant level.

6.3.3.4 Greenhouse Gas Emissions

The Distributed Generation Only Alternative would result in similar impacts due to GHG emissions as the proposed project but at a reduced scale. The types of construction and operation emissions would be similar because the construction and operational activities would be similar. The exact offset of the proposed project and the Distributed Generation Only Alternative are not known. However, the proposed project would permit up to 900 MW of solar projects. While it is possible for up to 900 MW of distributed generation to be built in the County, it is less likely than under the proposed project due to the economies of scale that result from utility scale projects and because a large number of distributed sites that would need to be identified and permitted. Therefore, the Distributed Generation would likely result in less GHG offsets when compared with the proposed project.

6.3.3.5 Hazards and Hazardous Materials

The Distributed Generation Only Alternative would result in slightly reduced impacts due to hazardous materials compared with the proposed project. This is because while the types of hazardous materials (fuels, hydraulic and dielectric fluids, oil and grease, cleaning solutions/solvents, and storage batteries) used in the construction would be similar, the Distributed Generation Only Alternative would likely limit the technology built to primarily solar PV projects. As such, the impacts would be similar to those addressed for the Solar PV

Only Alternative. Also, it is unknown whether the Distributed Generation Only Alternative would achieve 900 MW of projects so the amount of hazardous materials used under this alternative would be reduced.

6.3.3.6 Hydrology and Water Quality

The Distributed Generation Only Alternative would result in impacts associated with hydrology and water quality that would be similar in nature to those described for the proposed project. This includes impacts to drainage patterns and flow directions, runoff rates, flooding, existing or planned storm drainage system capacity, groundwater supplies and recharge, and impacts to water quality.

Because the Distributed Generation Only Alternative would likely be comprised primarily of solar PV projects, it would require only minimal water during operations. Solar thermal technologies require additional water during operations even with implementation of dry cooling technology. As such, the Distributed Generation Only Alternative would result in reduced impacts to groundwater supplies and recharge compared with the proposed project. It is unknown whether the Distributed Generation Only Alternative would achieve 900 MW of projects so the impacts to hydrology and water quality would likely be reduced, although potentially not below a level of significance without mitigation.

6.3.3.7 Socioeconomics

By only allowing development of distributed generation projects ranging from 1 to 20 MW throughout the County, the potential for socioeconomic effects from temporary worker in-migration, social disruption affects, and any increased demands to public services would be significantly reduced with this alternative. When compared to utility scale projects, solar facilities less than 20 MW would require a smaller construction workforce, many of which could come from within the County and the greater Eastern Sierra MSA. However, it is unknown if this alternative would result in a cumulative number of distributed generation projects that could equal the total MW output of the proposed project SEDAs.

Because utility scale projects result in much higher overall capital cost, should this alternative result in a significant decrease in the number of solar projects developed within the County, it would result in a direct decrease in local economic benefits from local spending and direct/indirect worker wages. Therefore, this alternative would be expected to decrease the potential for adverse socioeconomic effects from temporary worker in-migration, and may result in a decrease in beneficial economic effects when compared to the proposed project.

6.3.4 Reduced SEDA Alternative

Under the Reduced SEDA Alternative, the County would eliminate certain SEDAs from potential development, while maintaining the total allowable MW capacity (900 MW) and allowable developable acreage (5,400 acres) included in the proposed project. Under this alternative, the Western Solar Energy Group would be reduced to only the Owens Lake SEDA (the Laws, Rose Valley, and Pearsonville SEDAs would be eliminated). The solar energy development cap of 250 MW on 1,500 acres would be maintained for this SEDA. The Southern Solar Energy Group (the Trona SEDA) would not change. The Eastern Solar Energy Group would maintain a solar energy development cap of 550 MW on 3,300 acres; however, the Chicago Valley SEDA would be eliminated; the Sandy Valley SEDA would be reduced to a 50-MW cap; and, the Charleston View SEDA would be increased to a 500 MW cap. Refer to Table 6-1 for a summary of the Reduced SEDA Alternative.

Table 6-1
TOTAL ALLOWABLE MEGAWATTS AND DEVELOPABLE AREA PER SOLAR ENERGY GROUP BY SOLAR ENERGY DEVELOPMENT AREA UNDER THE REDUCED SEDA ALTERNATIVE

Solar Energy Group (Total Allowable Capacity [megawatts])	Solar Energy Development Area	Total Allowable Capacity (megawatts)	Total Allowable Developable Area (acres)
Western (Owens Lake only) (250 megawatts)	Owens Lake	250	1,500
Southern (100 megawatts)	Trona	100	600
Eastern (550 megawatts)	Charleston View	500	3,000
	Sandy Valley	50	300

The overall MW cap for the REGPA under the Reduced SEDA Alternative would be 900 MW. This alternative would likely result in reduced impacts to aesthetics and cultural resources because it would restrict the total development allowed in the Western Solar Energy Group to the Owens Lake SEDA. However, because the total acreage of development would remain the same, the impacts of this alternative would not likely be below a level of significance.

The Owens Lake is land that is under jurisdiction of the SLC and is leased to LADWP. Development of this area would need to be coordinated with both agencies. The County would receive no tax benefit from development of this land; therefore, beneficial economic impacts would be slightly less than under the proposed project.

The primarily differences between the Reduced SEDA Alternative and the proposed project are discussed below.

6.3.4.1 Aesthetics

Aesthetic impacts associated with the Reduced SEDA Alternative would be similar to the proposed project in that the types of activities associated with development of renewable energy under the No Project Alternative would be the same as with the proposed project. However, under the Reduced SEDA Alternative, renewable projects would not be built in the Laws, Rose Valley, Pearsonville, and Chicago Valley SEDAs. This would reduce potential visual impacts to certain locations identified in Section 4.1.1. Eliminating the Laws SEDA would potentially reduce visual impacts to viewers in the community of Laws and viewers from the White Mountains. Eliminating the Rose Valley SEDA would reduce visual impacts to viewers from the nearby Sierra Mountains, although views of the Owens Lake SEDA would likely still be visible for many of these viewers. Views of development in the south end of the SEDA from Red Hill or Coso Volcanic field would be eliminated. Eliminating the Pearsonville SEDA would potentially reduce visual impacts to viewers in the community of Pearsonville and viewers in the Sierra Mountains. Eliminating the Chicago Valley SEDA would potentially reduce visual impacts to viewers in the Nopah and Resting Spring Range. The increase in the cap for the Charleston View SEDA could result in slight increase in visual impacts from surrounding areas. Because the Reduced SEDA Alternative would reduce the potential locations for renewable development, it would reduce the number of viewers of the renewable energy projects. However, because of the size and location of the remaining SEDAs, the impacts of development would be lessened but would remain significant and unmitigated.

6.3.4.2 Biological Resources

The Reduced SEDA Alternative would further restrict the areas that could be impacted by solar development in the Western and Eastern Solar Energy Groups when compared with the proposed project. The Western Solar Energy Group is the most biologically diverse and rich of the Solar Energy Groups. The Owens Valley (in which the OVSA and Laws SEDA are located) contain diverse habitats with a wide variety of sensitive biological resources including special status plants and wildlife, sensitive natural communities, critical habitat, migration and wildlife movement areas, and federal and state protected areas. Four species of fish and one plant are endemic to the Owens Valley. The Rose Valley and Pearsonville SEDAs also have special status species with the potential to occur, and sensitive natural communities/habitats. The Rose Valley SEDA contains Mohave ground squirrel Conservation Area, a special status natural community, and Important Bird Areas. The Eastern Solar Energy Group is less biologically diverse, but contains sensitive habitats and important habitat for various special status species, notably the desert tortoise. Of the SEDAs in the Eastern Solar Energy Group, the Chicago Valley SEDA is the only SEDA containing a sensitive natural community. By excluding these areas from potential utility scale solar energy development under the Reduced SEDA Alternative, potential impacts to biological resources occurring in those areas would be substantially reduced or eliminated (but still significant).

The Owens Lake SEDA contains special status species habitat, including habitat for fish endemic to the Owens River. The SEDA provides important bird and wildlife migration and movement habitat. However, the majority of the lake is a dry, barren lake bed uninhabitable to most species. Like the proposed project, development in the Owens Lake SEDA under the Reduced SEDA Alternative would involve constructing up to 250 MW of solar facility on up to 1,500 acres (2.3 square miles) on the approximately 100 square mile lake bed. Therefore, impacts to biological resources would be similar to those identified under the proposed project for development in the Owens Lake SEDA. Under this alternative, up to 600 more acres of solar development (3,000 acres total) could occur in the Charleston View SEDA, which would result in overall greater potential to impact biological resources in this SEDA. Impacts in the Sandy Valley SEDA would be reduced by 300 acres.

The total acreage of impacts would remain the same under the Reduced SEDA Alternative as the proposed project, and this alternative has the potential to increase impacts to biological resources in the Charleston View SEDA. However, by eliminating more biologically sensitive areas from potential development, overall impacts to biological resources would be reduced from those identified under the proposed project, although likely not below a level of significance without mitigation. Additionally, solar thermal projects could still be implemented under the Reduced SEDA Alternative, resulting in similar significant and unavoidable impacts to biological resources as those determined for the proposed project.

6.3.4.3 Cultural Resources

The impacts to cultural resources associated with the Reduced SEDA Alternative would have a potentially significant effect when viewed programmatically. Reducing the SEDAs to only the Owens Lake SEDA in the Western Solar Energy Group and eliminating the Chicago Valley SEDA from the Eastern Solar Energy Group would likely lessen the number of cultural resources potentially impacted by solar development in particular in the eastern portion of the County. Additionally, this would remove two SEDAs, Chicago Valley and Rose Valley, that are considered highly sensitive for cultural resources. At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to these resources. Because of this uncertainty, the impact is considered to remain significant and unavoidable. Mitigation Measures CUL-1a through CUL-1g and CUL-3a would be applied under the Reduced SEDA Alternative and therefore would reduce affects to cultural resources. The Reduced SEDA Alternative would likely have a lesser impact to cultural resources that the proposed project at the programmatic level, although likely not below a level of significance without mitigation.

6.3.4.4 Greenhouse Gas Emissions

The Reduced SEDA Alternative would allow the same technologies, total acreage of development and MW capacity as the proposed project; therefore, the Reduced SEDA Alternative would result in GHG emissions and offsets similar to the proposed project at a programmatic level.

6.3.4.5 Hazards and Hazardous Materials

Because the Reduced SEDA Alternative would permit the same solar technologies as the proposed project, it would result in similar impacts due to hazardous materials use. This is because the types of hazardous materials (fuels, hydraulic and dielectric fluids, oil and grease, cleaning solutions/solvents, and storage batteries) used in the proposed project would be similar to the types of hazardous materials used for renewable development under the Reduced SEDA Alternative. Standard measures would be required to reduce the potential spill of any hazardous materials and the developers would be required to incorporate spill prevention plans into their construction and operation.

6.3.4.6 Hydrology and Water Quality

The Reduced SEDA Alternative would result in impacts associated with hydrology and water quality that would be similar in nature to those described for the proposed project. This includes impacts to drainage patterns and flow directions, runoff rates, flooding, existing or planned storm drainage system capacity, groundwater supplies and recharge, and impacts to water quality. The Owens Lake SEDA is nearly entirely within a 100-yesr floodplain, whereas the SEDAs eliminated from the Western Solar Energy Group under this alternative do not contain large areas of 100-year floodplain. Although development in the Owens Lake SEDA is possible under the proposed project, restricting all solar development to the Owens Lake SEDA under the Reduced SEDA Alternative results in a more likely and possibly greater impact to the 100-year floodplain than under the proposed project which would allow the development in other areas outside of the

100-year floodplain. At the programmatic level, because the Reduced SEDA Alternative would develop the same technologies, total acreage of development, and MW capacity as the proposed project, the Reduced SEDA Alternative would result in impacts to hydrology and water quality similar to the proposed project.

6.3.4.7 Socioeconomics

The Reduced SEDA Alternative would allow the same technologies, total acreage of development and MW capacity as the proposed project; therefore, the potential for temporary worker in-migration and social disruption effects (including those to public services) would be similar to the proposed project as development of large utility scale solar projects within the County would continue under this alternative. This alternative restricts solar developments in the Western Solar Energy Group to the Owens Lake SEDA while maintaining the solar energy development cap of 250 MW; and eliminates the Chicago Valley SEDA from the Eastern Solar Energy Group while maintaining the solar energy development cap of 550 MW for the remaining SEDAs in that solar energy group. Because socioeconomic effects are region-based, this alternative would have the same potential for adverse socioeconomic effects as the proposed project. Like the proposed project, utility scale and larger distributed generation projects, which create the greatest potential for temporary worker in-migration and social disruption, would be developed under this alternative. As a result, the long-term fiscal and job growth effects would also be similar to the proposed project. Therefore, socioeconomic impacts would be similar to those described for the proposed project.

6.3.5 Solar Energy Development on Previously Disturbed Lands Only Alternative

Under this alternative, the County would require that future applicants for solar energy development projects site the majority of their projects on previously disturbed lands within the eight proposed SEDAs under this alternative. The term "majority" is defined as greater than 60 percent. Disturbed lands include Owens Lake, abandoned mine lands, degraded lands, former landfill sites, Superfund sites, brownfields, and/or abandoned grazing/agricultural lands. The acreage and development caps presented under the proposed project would remain intact for the Solar Energy Development on Previously Disturbed Lands Alternative, although the feasibility of providing adequate sites to achieve this development potential is unknown. This alternative does not meet the project objectives to the degree as the project.

This alternative is environmentally superior to the proposed project in that it substantially reduces impacts to aesthetics, air quality, biological resources, and cultural resources over the proposed project but not to below a level of significance.

The primarily differences between the Solar Energy Development on Previously Disturbed Lands Only Alternative and the proposed project are discussed below.

6.3.5.1 Aesthetics

Aesthetic impacts associated with the alternative would be similar to those described for the proposed project described in Section 4.1, but at a reduced scale. While development in some of the SEDAs could remain at utility scale, many of the other disturbed land sites could likely be smaller in acreage. Smaller sites include areas such as the Independence Disposal Site, 40 acres, and the Bishop Sunland site, 69 acres. Some disturbed sites, such as the Saline Valley Air to Air Gunnery Range, a Formerly Used Defense Site, are much greater at 591,000 acres. Because the majority of the disturbed sites in the County are located on smaller sites, this alternative would likely result in more solar PV projects than solar thermal projects. Therefore, the operational aesthetic impacts would be limited primarily to those described for PV facilities. This would limit the height structures of the solar panels themselves to 30 feet as compared with solar thermal technologies that can include structures up to 750 feet tall. On the other hand, a greater number of smaller sites would most likely result in more intertie facilities across the landscape, particularly since existing distribution and/or transmission lines may not be located nearby.

As noted for the proposed project, PV arrays are comprised of low-profile elements, and do not result in dominant vertical massing effects. However, because some of the disturbed areas could still be large, they could still create a large-scale dominant visual feature that covers large areas of relatively flat land. This visual impact would be greatly reduced when compared with the proposed project but would still introduce visual features that substantially contrast with, and degrade the existing visual character or quality of the site and its surroundings. In many instances, using disturbed land only for solar projects would reduce visual impacts to less than significant. However, depending on the size and location of the project and the nearby sensitive viewers, a project sited on already disturbed land could result in significant visual impacts. Therefore, the Previously Disturbed Lands Alternative would result in impacts similar to the proposed project at a programmatic level.

6.3.5.2 Biological Resources

As described under aesthetics, under the Solar Energy Development on Previously Disturbed Lands Only Alternative, development at some of the SEDAs (such as portions of the Owens Lake, Charleston View, Pearsonville, and Trona SEDAs), could remain at utility scale but many of the other disturbed land sites would likely be smaller in acreage. Because the majority of the disturbed sites in the County are located on smaller sites, this alternative would likely result in more solar PV projects than the solar thermal projects that could be constructed under the proposed alternative. Therefore, the operational impacts to biological resources would be limited primarily to those described for PV facilities, and the potential for impacts associated with solar power tower facilities would be reduced from the potential impacts under the proposed project, although not potentially to less than significant levels. Additionally, by limiting future development to previously disturbed sites in the SEDAs, existing natural areas providing quality habitat to plants and wildlife in the region would be avoided. It is unknown whether the Solar Energy Development on Previously Disturbed Lands Only Alternative would achieve 900 MW of solar development, so there is the potential for reductions in physical impacts to biological resources from those identified under the proposed project. Overall, the Previously Disturbed Lands Alternative would have a slightly lesser impact to biological resources than the proposed project.

6.3.5.3 Cultural Resources

The impacts to cultural resources associated with the Solar Energy Development on Previously disturbed Lands Only Alternative would have a potentially significant effect when viewed programmatically. The reduced acreage allowed for development under this alternative could reduce the impacts to cultural resources. However, it is possible that this alternative could increase the impacts to historic period cultural resources. Disturbed lands, including abandoned mine lands, degraded lands, former landfill sites, Superfund sites, brownfields, and abandoned grazing and agricultural lands, are areas that can be sensitive for historic period cultural resources and, if older than 50 years, may be eligible as historical resources themselves. Impacts to cultural landscapes could still occur.

Prehistoric sites may still be present below the level of surface disturbance and would not be identified through field survey and could be impacted by the solar development. At the programmatic level of analysis, it is not possible to know precisely the location, extent and particular characteristics of impacts to these resources. Because of this uncertainty, at the programmatic level of analysis the impact is considered significant and unavoidable. Mitigation Measures CUL-1a through CUL-1g and CUL-3a would be applied under the Disturbed Lands Only Alternative and therefore would reduce affects to cultural resources. Based on the reduced acreage, Solar Energy Development on Previously Disturbed Lands Only Alternative would likely have a slightly lesser impact to cultural resources than that of the proposed project.

6.3.5.4 Greenhouse Gas Emissions

The Solar Energy Development on Previously Disturbed Lands Only Alternative would result in similar impacts due to GHG emissions as the proposed project but at a reduced scale. The types of construction and operation impacts would be similar because the construction and operational activities would be similar. The exact offset of the proposed project and the alternative are not known. However, the proposed project would permit up to 900 MW of solar projects. While it is possible for up to 900 MW could be built on disturbed areas in the County, the amount of renewable energy would be subject to the number of disturbed areas available. Therefore, the Solar Energy Development on Previously Disturbed Lands Only Alternative would likely result in fewer GHG offsets when compared with the proposed project. Overall, the Previously Disturbed Lands Only Alternative would likely have a similar impact to GHG emissions than that of the proposed project.

6.3.5.5 Hazards and Hazardous Materials

The Solar Energy Development on Previously Disturbed Lands Only Alternative could result in slightly increased impacts due to hazardous materials compared with the proposed project. While the types of hazardous materials (fuels, hydraulic and dielectric fluids, oil and grease, cleaning solutions/solvents, and storage batteries) used in the construction would be similar between the two alternatives, the Solar Energy Development on Previously Disturbed Lands Only Alternative could result in projects being located on sites that have more existing hazardous materials. For example, the Saline Valley Air to Air Gunnery Range has potential contaminants including explosives, lead, perchlorate, and munitions debris, that would need to be addressed prior to development of a renewable project (DTSC, 2007). As such, the impacts could be greater than those addressed for the proposed project.

It is unknown whether the Solar Energy Development on Previously Disturbed Lands Only Alternative would achieve 900 MW of projects so the amount of hazardous materials used under this alternative would be reduced. Overall, the Previously Disturbed Lands Only Alternative would likely have similar impacts due to hazards and hazardous materials compared to the proposed project.

6.3.5.6 Hydrology and Water Quality

The Solar Energy Development on Previously Disturbed Lands Only Alternative would result in impacts associated with hydrology and water quality that would be similar in nature to those described for the proposed project. This includes impacts to drainage patterns and flow directions, runoff rates, flooding, existing or planned storm drainage system capacity, groundwater supplies and recharge, and impacts to water quality.

Because the Solar Energy Development on Previously Disturbed Lands Only Alternative would likely be comprised primarily of solar PV projects, it would require only minimal water during operations. Solar thermal technologies require additional water during operations even with implementation of dry cooling technology. As such, the Solar Energy Development on Previously Disturbed Lands Only Alternative would result in reduced impacts to groundwater supplies and recharge compared with the proposed project. It is unknown whether the Solar Energy Development on Previously Disturbed Lands Only Alternative would achieve 900 MW of projects so the impacts to hydrology and water quality would likely be reduced.

This PEIR is an informational document to inform decision-makers and the public of the potential environmental consequences of approving the proposed REGPA. This PEIR contains mitigation measures designed to help avoid or minimize significant environmental impacts from future development under the REGPA. A detailed description of the proposed project and project alternatives are contained in Section 3.0 and Section 6.0, respectively.

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6.3.5.7 Socioeconomics

The acreage and development caps presented under the proposed project would remain intact for this alternative, but with solar project development allowed only on disturbed lands including Owens Lake, abandoned mine lands, degraded lands, former landfill sites, Superfund sites, brownfields, and/or abandoned grazing/agricultural lands. Because socioeconomic effects are region-based, this alternative would only slightly decrease the potential for adverse socioeconomic impacts by reducing the total area allowable for project development. However, utility scale and larger distributed generation projects, which create the greatest potential for temporary worker in-migration and social disruption, would continue to be developed under this alternative. Beneficial long-term fiscal and job growth effects would also be slightly less than the proposed project because of the overall reduction in allowable project areas. Therefore, socioeconomic impacts would be similar or slightly less than that described for the proposed project.

6.4 SUMMARY OF ALTERNATIVES ANALYSIS

Table 6-2 provides a comparison of the impacts resulting from the proposed project and the alternatives. In summary, depending on the location and size of approved projects, the No Project Alternative could result in slightly greater impact than the proposed project to aesthetics, hydrology/water quality, and socioeconomics. The Reduced SEDA Alternative would be expected to result in similar impacts to all environmental issue areas as those identified for the proposed project except that fewer areas of the County would be affected. The Solar PV Only and Distributed Generation Only Alternatives would likely result in lesser impacts to biological resources and cultural resources; the Disturbed Lands Only Alternatives would likely result in lesser impacts for cultural resources.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126.6(e)(2) of the State CEQA Guidelines requires identification of an alternative other than the No Project Alternative as the environmentally superior alternative. As identified in this PEIR, the No Project Alternative, depending on the location and size of approved projects under the No Project Alternative, could likely result in an exacerbation of the potential impacts in relation to the proposed project. The following alternatives are identified as being environmentally superior to the proposed project: Solar PV Only Alternative; Distributed Generation Only Alternative; Reduced SEDA Alternative; and Solar Energy Development on Previously Disturbed Lands Only Alternative. These alternatives would not meet the project objectives to the degree as the project.

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Table 6-2
COMPARISON OF PROJECT ALTERNATIVES IMPACTS TO THE PROPOSED PROJECT IMPACTS

Environmental Issue Area	Proposed Project	No Project Alternative *	Solar Photovoltaic Only Alternative	Distributed Generation Only Alternative	Reduced SEDA Alternative	Disturbed Lands Only Alternative
Aesthetics	SU	Potentially greater degree of impact (SU)	Similar (SU)	Similar (SU)	Lesser degree of impact (SU)	Similar (SU)
Agricultural Resources	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Air Quality	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Biological Resources	SU	Potentially greater degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)
Cultural Resources	SU	Potentially greater degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)	Lesser degree of impact (SU)
Geology and Soils	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Greenhouse Gas	SM	Potentially lesser degree of impact (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Hazards and Hazardous Materials	SM	Potentially greater degree of impact (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Hydrology and Water Quality	SM	Potentially greater degree of impact (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Land Use and Planning	LTS	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)
Mineral Resources	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Noise	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Population and Housing	LTS	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)
Public Services	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Recreation	LTS	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)	Similar (LTS)

Table 6-2 (cont.)
COMPARISON OF PROJECT ALTERNATIVE IMPACTS TO THE PROPOSED PROJECT IMPACTS

Environmental Issue Area	Proposed Project	No Project Alternative *	Solar Photovoltaic Only Alternative	Distributed Generation Only Alternative	Reduced SEDA Alternative	Disturbed Lands Only Alternative
Socioeconomics	SM	Potentially greater degree of impact (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Transportation and Circulation	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)
Utilities	SM	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)	Similar (SM)

Notes:
*No Project Alternative comparison depends on the location and size of projects actually approved.
LTS = less than significant impact; SM = significant but mitigated impact; SU = significant and unmitigated impact; Similar = potentially the same degree of impact; Greater = potentially greater degree of impact.

7.0 REFERENCES

7.1 EXECUTIVE SUMMARY REFERENCES

Avian Power Line Interaction Committee (APLIC)

2014. Collisions page on APLIC website. Available at: http://www.aplic.org/Collisions.php. Accessed August 28, 2014.

2012. Reducing Avian Collisions with Power Lines. The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.

2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute and the California Energy Commission. Washington, D.C., and Sacramento, CA.

1994. Mitigating Bird Collisions with Power Lines.

Avian Power Line Interaction Committee and United States Fish and Wildlife Service (APLIC and USFWS)

2005. Avian Protection Plan Guidelines.

California Department of Fish and Game (CDFG)

2012. Staff Report on Burrowing Owls.

2003. Mohave Ground Squirrel Survey Guidelines. January.

1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. November.

California Energy Commission and California Department of Fish and Game (CEC and CDFG)

2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California.

Desert Tortoise Council, The

1999. Guidelines for Handling Desert Tortoises During Construction Projects. July 1994, revised July 1999.

Edison Electric Institute and Avian Power Line Interaction Committee (EEI and APLIC)

2004. Mitigation Bird Collisions with Power Lines: The State of the Art in 1994.

Inyo, County of (Inyo County)

2001. Inyo County General Plan. December, as amended through 2010.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

United States Fish and Wildlife Service (USFWS)

2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise. Region 8, Pacific Southwest Region. Sacramento, California.

2010. Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations. Available at: http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/usfws_interim_goea_monitoring_protocol_10march2010.pdf. Accessed on August 14, 2014.

2009. Desert Tortoise (Mojave Population) Field Manual: (*Gopherus agassizii*). Region 8, Sacramento, California.

2007. USFWS National Bald Eagle Management Guidelines. May.

2004. Protocol for Evaluating Bald Eagle Habitat and Populations in California. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. Accessed on August 14, 2014.

2001. Least Bell's Survey Guidelines. Available at: http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/LBVireo.2001.protocol.pdf. Accessed on August 14, 2014.

2000. Southwestern Willow Flycatcher Protocol Revision.

7.2 PROJECT LOCATION AND SETTING REFERENCES

Bureau of Land Management (BLM)

2002. Northern and Eastern Mojave Desert Management Plan Amendment to the California Conservation Area Plan and Final Environmental Impact Statement. California Desert District Office. July.

1999. The California Desert Conservation Area Plan 1980 as amended. California Desert District Office. March.

Great Basin Unified Air Pollution Control District (GBUAPCD)

2011. Supplemental Board Report – Abatement Hearing: Adoption of an Order to Abatement directing the city of Los Angeles to implement an additional 3.1 square miles of Best Available Control Measures for control of PM_{10} emissions from the dried bed of Owens Lake (known as the Phase 7a project).

Inyo County Planning Department (Inyo County)

2013. Background Report: Renewable Energy General Plan Amendment. October 22.

Jones and Stokes

2002. Inyo County General Plan: Land Use and Conservation Open Space Elements Diagram 1. January.

Los Angeles Department of Water and Power and Ecosystems Sciences (LADWP et al.)
2010. Final Owens Valley Land Management Plan. April 28.

Los Angeles Department of Water and Power and Environmental Protection Agency (LADWP and EPA)
2004. Final Lower Owens River Project EIR/EIS. June.

7.3 PROJECT DESCRIPTION REFERENCES

Bureau of Land Management and the Department of Energy (BLM et al.)
2010. Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States. December.

California Energy Commission (CEC).
2013. Energy Storage Research. http://www.energy.ca.gov/research/integration/storage.html. Accessed October 30 by Aspen Environmental Group.

California Public Utilities Commission (CPUC)
2013. Renewables Portfolio Standard Quarterly Report:3rd and 4th quarter 2012. March. http://www.cpuc.ca.gov/NR/rdonlyres/4F902F57-78BA-4A5F-BDFA-C9CAF48A2500/0/2012_Q3_Q4RPSReportFINAL.pdf.

7.4 AESTHETICS REFERENCES

National Park Service (NPS)
2013. Annual Park Recreation Visitation. Available at: <https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Annual%20Park%20Recreation%20Visitation%20(1904%20-%20Last%20Calendar%20Year)?Park=MANZ>. Accessed October 2, 2014.

Renewable Energy Action Team (REAT)
2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

US Census Bureau (Census)
2010. 2010 Census Population for Inyo County. Available at: <http://www.census.gov/2010census/>

7.5 AGRICULTURE AND FOREST RESOURCES REFERENCES

Bureau of Land Management (BLM)
2013. Bureau of Land Management – Geospatial Data Downloads, Lands. Renewable Energy Project Applications in California Modified: November 21, 2013. Available at: http://www.blm.gov/ca/gis. Accessed November 21, 2013 by Aspen Environmental Group.

Inyo and Mono Counties Agricultural Commissioner's Office (Agricultural Commissioner)
2013. 2013 Crop and Livestock Report. Bishop, CA.

Inyo, County of (Inyo County)
2001. Inyo County General Plan. December, as amended through 2010.

Natural Resources Conservation Service (NRCS)
2014. Farmland Protection Policy Act. Background and Purpose. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail//?cid=nrcs143_008275. Accessed September 13, 2014.

7.6 AIR QUALITY REFERENCES

California Air Resources Board (CARB)
2014a. Area Designation Maps / State and National. Available at: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed July 29, 2014.

2014b. Top 4 Measurements and Days Above the Standard. Available at: http://www.arb.ca.gov/adam/welcome.html. Accessed August 2014.

2013. Ambient Air Quality Standards. June. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed August 2014.

Mojave Desert Air Quality Management District (MDAQMD)
2009. California Environmental Quality Act (CEQA) and Federal Conformity Guidelines. February. Available at: http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=1806

Renewable Energy Action Team (REAT)
2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

7.7 BIOLOGICAL RESOURCES REFERENCES

American Bird Conservancy
2011. Nevada Citizens Asked to Help Prevent Deaths of Thousands, Maybe Millions of Birds. Media Release Washington D.C., November 22.

Audubon California
2013a. New Opportunities for Birds at Owens Lake. Available at: http://ca.audubon.org/protect-birds-danger-open-pipes. Accessed August 7, 2014.

2013b. Protect Birds from the Danger of Open Pipes. Available at: http://ca.audubon.org/protect-birds-danger-open-pipes. Accessed August 7, 2014.

Avian Power Line Interaction Committee (APLIC)
2014. Collisions page on APLIC website. Available at: http://www.aplic.org/Collisions.php. Accessed August 28, 2014.

2012. Reducing Avian Collisions with Power Lines. The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.

2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute and the California Energy Commission. Washington, D.C., and Sacramento, CA.

1994. Mitigating Bird Collisions with Power Lines.

Avian Power Line Interaction Committee and United States Fish and Wildlife Service (APLIC and USFWS)
2005. Avian Protection Plan Guidelines.

Baxter, C.V., K.D. Fausch, M. Murakami and P.L. Chapman
2004. Non-native stream fish invasion restructures stream and riparian forest food webs by interrupting reciprocal prey subsidies. Ecology 85: 2656-2663.

Bent, A.C.
1997. Swainson's Hawk (*Buteo swainsoni*). In The Birds of North America, No. 265 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D.C.

1937. Life histories of North American birds of prey, Part 1. Bulletin of the United States National Museum 167. Cited in England, A. S., M. J. Bechard, and C.S. Houston.

Brean, H.
2011. Mining Claim Markers Blamed for Thousands of Bird Deaths. Las Vegas Review-Journal. November 7, 2011.

Bureau of Land Management (BLM)
2013. Concise List of Special Status Plants – BLM Special Status Plants under the jurisdiction of the Bishop Field Office as of September 10, 2013. Available at: http://www.blm.gov/ca/st/en/prog/ssp.html. Accessed August 6, 2014.

2010. Special Status Animals in California, Including BLM Designated Sensitive Species. List dated February 8, 2010. Available at: http://www.blm.gov/ca/st/en/prog/wildlife.html Accessed on August 6, 2014.

Bureau of Land Management (BLM) (cont.)

2006. Record of Decision, West Mojave Plan, Amendment to the California Desert Conservation Area Plan, March. Available at: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs/wemo_pdfs.Par.4dfb777f.File.pdf/wemo_rod_3-06.pdf Accessed on October 6, 2014.

2005. Final Environmental Impact Report and Statement for the West Mojave Plan. January. Available at: http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1-Chapter1_Bookmarks.pdf Accessed on October 6, 2014.

2000a. California, USA Bureau of Land Management Areas of Critical Environmental Concern. California State Office, Mapping Science Unit. BLM. Available at: http://databasin.org/datasets/671654bad6b64dc08b54b197f4de6538. Accessed August 19, 2014.

2000b. West Mojave Plan Draft Evaluation Report: Suggested Conservation Strategies for Mohave Ground Squirrel and Appendices. September 2000.

1980. The California Desert Conservation Area Plan, as amended. Riverside, California.

unpubl. Explanation of Map of FWS-Identified Priority Desert Tortoise Connectivity Areas. Available on the BLM Solar Energy Program Website at: http://solareis.anl.gov/maps/alternatives/index.cfm#dt. Accessed October 6, 2014.

Burns, J.W.

1970. Spawning Bed Sedimentation Studies in Northern California Streams. California Fish and Game vol. 56. pp. 253-270.

California Department of Fish and Game (CDFG)

2012. Staff Report on Burrowing Owls.

1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. November.

California Department of Fish and Wildlife (CDFW)

2014. California Department of Fish and Game, Natural Diversity Database Biogeographic Data Branch. Sacramento, California. RareFind 5.0. Accessed on July 30, 2014.

2010a. List of California Terrestrial Natural Communities.

2010b. Bald Eagle Breeding Survey Instructions. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. Accessed on July 25, 2014.

California Energy Commission and California Department of Fish and Game (CEC and CDFG)
2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California.

California Native Plant Society (CNPS)
2014. Inventory of rare and endangered plants for Inyo County (online edition). California Native Plant Society, Sacramento, CA. Available at: http://www.cnps.org/inventory. Accessed on July 25, 2014.

Cordone, A.J. and D.W. Kelley
1961. The Influences of Inorganic Sediment on the Aquatic Life of Streams. California Fish and Game vol. 47: 189-228.

Davis, F.W., D.M. Stoms, A.D. Hollander, K.A. Thomas, P.A. Stine, D. Odion, M.I. Borchert, J.H. Thorne, M.V. Gray, R.E. Walker, K. Warner, and J. Graae
1998. The California Gap Analysis Project – Final Report. University of California, Santa Barbara, California.

Desert Tortoise Council, The
1999. Guidelines for Handling Desert Tortoises During Construction Projects. July 1994, revised July 1999.

Dudek and ICF International
2012. Desert Renewable Energy Conservation Plan Baseline Biology Report. Prepared for California Energy Commission. March.

Edison Electric Institute and Avian Power Line Interaction Committee (EEI and APLIC)
2004. Mitigation Bird Collisions with Power Lines: The State of the Art in 1994.

England, A.S., J.A. Estep, W.R. Holt
1995. Nest-site selection and reproductive performance of urban-nesting Swainson's Hawks in the Central Valley of California. Journal of Raptor Research 29: 179-186.

Estep, J.A.
1989. Biology, movements and habitat relationships of the Swainson's hawk in the Central Valley of California, 1986-87. California Department of Fish and Game, Nongame Bird and Mammal Section Report. Cited in Natomas Basin Habitat Conservation Plan.

Garrison, B.A.
1999. Bank Swallow (*Riparia riparia*). In The Birds of North America, No. 414 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Garrison, B.A., J.M. Humphrey, S.A. Laymon
1987. Bank Swallow distribution and nesting ecology on the Sacramento River, California. Western Birds 18: 71–76. Cited in Garrison, B.A. 1999. Bank Swallow (*Riparia riparia*). In The Birds of North America, No. 414 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Gehring, J., P. Kerlinger, A.M. Manville II
2009. Communication towers, lights, and birds: successful methods of reducing the frequency of avian collisions. Ecological Applications. vol. 19, No. 2: 505-514.

Holland, R.F., Ph.D.
1986. Preliminary Description of the Terrestrial Natural Communities of California. State of California Department of Fish and Game, Sacramento, California.

Horvath, G., G. Kriska, P. Malik, B. Robertson
2009. Polarized Light Pollution: A New Kind of Ecological Photopollution. Frontiers in Ecology and the Environment. vol. 7: 317-325.

Kagan, R.A., T.C. Viner, P.W. Trail, E.O. Espinoza
unpubl. Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis. National Fish and Wildlife Forensics Laboratory.

Los Angeles Department of Water and Power (LADWP)
2013. Southern Owens Valley Solar Ranch Draft Environmental Impact Report. State Clearinghouse No. 2010091094. August 2013.

2010. Owens Lake Habitat Management Plan. March.

Mayer, K.E., W.F. Laudenslayer, Jr., eds.
1988. A Guide to Wildlife Habitats of California. State of California Resources Agency. State of California Department of Fish and Game, Sacramento, CA. 166 pp. Available at: http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp. Accessed on July 29, 2014.

Moyle, P.B.
2002. Inland Fishes of California. Berkeley: University of California Press.

National Marine and Fisheries Service
2003. Biological Opinion, Ord Ferry Road Bridge Seismic Retrofit Project. SWR-01-SA-6002: HLB.

Natural Resources Conservation Service (NRCS)
2002. Soil Survey of Benton-Owens Valley Area, California, Parts of Inyo and Mono Counties.

Nussear, K.E., T.C. Esque, R.D. Inman, L. Gass, K.A. Thomas, C.S.A. Wallace, J.B. Blainey, D.M. Miller, and R.H. Webb

2009. Modeling Habitat of the Desert Tortoise (*Gopherus agassizii*) in the Mojave and parts of the Sonoran Deserts of California, Nevada, Utah, and Arizona: US Geological Survey Open-File Report 2009-1102, 18 pages.

Odell, E.A., and R.L. Knight

2001. Songbird and medium sized mammal communities associated with exurban development in Pitkin County Colorado. Conservation Biology. 15:1143-1150.

Owens Valley Conservancy (OVC)

2014. Post available at: http://www.ovcweb.org/OwensValley/OwensLake.html. Accessed July 29, 2014.

Penrod, K., R. Hunter, and M. Marrifield

2001. Missing Linkages: Restoring connectivity to the California landscape. California Wilderness Coalition, the Nature Conservancy, US Geological Survey, Center for Reproduction of Endangered Species, and California State Parks. Available at: ftp://ftp.dfg.ca.gov/BDB/GIS/BIOS/Public_Datasets/.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

Redding, J.M., C.B. Schreck, and F.H. Everest

1987. Physiological Effects on Coho Salmon and Steelhead of Exposure to Suspended Solids. Transactions of the American Fisheries Society. vol. 116. pp. 737-744.

Reid, S.M. and P.G. Anderson

1999. Effects of Sediment Released During Open-cut Pipeline Water Crossings. Canadian Water Resources Journal. vol. 24. pp. 235-252.

Sawyer, John O., T. Keeler-Wolf, J.M. Evens

2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press. Sacramento, California.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler

2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

Stahlecker, D.W.

1975. Impacts of a 230 kV transmission line on Great Plains wildlife. M.S. thesis, Colorado State University, Fort Collins, CO. Cited in Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation assessment of Greater Sage-Grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, WY.

United States Fish and Wildlife Service (USFWS)

2014a. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in Inyo County. Available at: https://www.google.com/?gws_rd=ssl#q=usfws+species+list+by+county. Accessed on July 25, 2014.

2014b. National Wetlands Inventory. Last modified May 1, 2014. Available at: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed on August 14, 2014.

2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise. Region 8, Pacific Southwest Region. Sacramento, California.

2010. Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations. Available at: http://www.fws.gov/southwest/es/oklahoma/documents/te_species/wind%20power/usfws_interim_goea_monitoring_protocol_10march2010.pdf. Accessed on August 14, 2014.

2009. Desert Tortoise (Mojave Population) Field Manual: (*Gopherus agassizii*). Region 8, Sacramento, California.

2007. USFWS National Bald Eagle Management Guidelines. May.

2004. Protocol for Evaluating Bald Eagle Habitat and Populations in California. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html. Accessed on August 14, 2014.

2001. Least Bell's Survey Guidelines. Available at: http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/LBVireo.2001.protocol.pdf. Accessed on August 14, 2014.

2000. Southwestern Willow Flycatcher Protocol Revision.

Watson, C.C. Huntley, C. Chainey-Davis

2012. Biology. Hidden Hills Solar Electric Generating System Preliminary Staff Assessment. Docket 11-AFC-2. May 24, 2012.

7.8 CULTURAL RESOURCES REFERENCES

Arnold, Jeanne E., and Michael R. Walsh

2010. California's Ancient Past: From the Pacific to the Range of Light. Washington, D.C.: Society Of American Archaeology Press.

Bamforth, D.B.

1990. "Settlement, Raw Material, and Lithic Procurement in the Central Mojave Desert," Journal of Anthropological Archaeology, vol. 9, pp. 70–104.

Bean, Lowell John

1978. Cahuilla. In California, edited by Robert F. Heizer, pp. 575-587. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and C.R. Smith

1978. Serrano. In California, edited by Robert F. Heizer, pp. 570-574. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Beck, Warren A., and Ynez D. Haase

1974. Historical Atlas of California. Norman, OK: University of Oklahoma Press. BIA. 2014

Bishop Paiute Tribe

2014. "About Us." Available at: http://www.bishoppaiutetribe.com/about-us.html. Accessed on August 19, 2014.

Bureau of Land Management (BLM)

2010. Fish Slough Area of Critical Environmental Concern. BLM Bishop Field Office. Available at: http://www.blm.gov/ca/st/en/fo/bishop/acec/fishslough_caso.html. Accessed August 20, 2014.

1980a. Final Environmental Impact Statement and Proposed Plan. California Desert Conservation Area. Prepared by Bureau of Land Management, Desert District. Riverside, California. September.

1980b. Cultural Resources Map, in Final Environmental Impact Statement and Proposed Plan. California Desert Conservation Area. Prepared by Bureau of Land Management, Desert District. Riverside, California. September.

1980c. Native American Resources Map, in Final Environmental Impact Statement and Proposed Plan. California Desert Conservation Area. Prepared by Bureau of Land Management, Desert District. Riverside, California. September .

Busby, Colin I., John M. Findlay, and James C. Bard

1979. A Cultural Resource Overview of the Bureau of Land Management Coleville, Bodie, Benton, and Owens Valley Planning Units, California. Bureau of Land Management Cultural Resources Publications, Anthropology-History. Bakersfield District, California.

California Department of Transportation (Caltrans)

2008. A Historical Context and Archaeological Research Design for Mining Properties in California. Available at: http://www.dot.ca.gov/ser/downloads/cultural/mining_study.pdf. Accessed July 31, 2014

California Energy Commission (CEC)

2012. Hidden Hills Solar Electric Generating System (HHSEGS) Final Staff Assessment. Docketed11-AFC-2 TN # 68953. December 21, 2012.

2011a. Historic California Posts: Fort Piute. Available at: http://www.militarymuseum.org/FtPiute.html. Accessed December 15, 2012.

2011b. Historic California Posts: Camp Independence. Available at: http://www.militarymuseum.org/CpIndependence.html. Accessed December 13, 2011

California Historical Resources Information System (CHRIS)

2013. Modernization and Sustainability Plan. Available at: http://ohp.parks.ca.gov/pages/1054/files/chris_mandsplan_august2013.pdf. Accessed November 20, 2013.

California Office of Historical Preservation (OHP)

2014. Listed Resources for Inyo County. Available at: http://ohp.parks.ca.gov/ListedResources/?view=county&criteria=14. Accessed July 8, 2014.

1995. Instructions for Recording Historical Resources. Available at: http://ohp.parks.ca.gov/pages/1054/files/manual95.pdf. Accessed July 8, 2014.

Chalfant, W.A.

1922. The Story of Inyo. Available at: https://archive.org/details/storyofinyo00chal. Accessed August 19, 2014.

Conrad, Richard D.

1973. National Register of Historic Places Inventory – Nomination Form for Saline Valley Salt Tram Historic Structure. National Park Service.

Derry et al.

1985. National Register Bulletin 24: Guidelines for Local Surveys - A Basis for Preservation Planning

Di Pol, John

2012. El Camino Sierra. Available at: http://www.owensvalleyhistory.com/el_camino_sierra/page76a.html. Accessed August 18, 2013.

Drews, Michael, Eric Ingbar, and Alyce Branigan

2004. Great Basin Restoration Initiative: Cultural Resources Landscape Level Planning Model. US Department of the Interior, Bureau of Land Management. Cultural Resources Series No. 14.

Eerkens, J.W.

2004. "Privatization, Small-Seed Intensification, and the Origins of Pottery in the Western Great Basin," American Antiquity, vol. 69, no. 4, pp. 653–670.

2003. "Residential Mobility and Pottery Use in the Western Great Basin," Current Anthropology, vol. 44, no. 65, pp. 728–738.

Eerkens, Jelmer W., and Amy Spurling

2008. Obsidian Acquisition and Exchange Networks: A Diachronic Perspective on Households in the Owens Valley. Journal of California and Great Basin Anthropology 29(2) pp. 111-126.

Erlandson, Jon and Todd J. Braje

2012. "Foundations for the Far West: Paleoindian Cultures on the Western Fringe of North America." The Oxford Handbook of North American Archaeology, Oxford Handbooks Online. Published September 2012. Edited by Timothy R. Pauketat.

Erlandson, Jon M., Torben C. Rick, Terry L. Jones, and Judith F. Porcasi

2007. One If by Land, Two If by Sea: Who Were the First Californians? In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar. Rowman Altamira Press. Fall 2007.

Faull, Mark R.

2007. The Coso Obsidian Economy and Possible Links to Village Establishment and Cultural Transition in the Rose Valley of Eastern California.

Fitzgerald, R.T., T.L. Jones, and A. Schroth

2005. "Ancient Long-Distance Trade in Western North American: New AMS Radiocarbon Dates from Southern California." Journal of Archaeological Science, vol. 32, pp. 423–434.

Fort Independence Indian Reservation

2005. "Native Heritage." Available at: http://www.fortindependence.com/. Accessed July 23, 2014.

Garfinkel, Alan

1976. A Cultural Resource Management Plan for the Fossil Falls/Little Lake Locality. Prepared for the Bakersfield District Office, BLM.

Garfinkel, Alan P., and Harold Williams

2009. Draft The Kawaiisu Handbook: A Sourcebook and Guide to the Primary Resources on the Native Peoples of the Far Southern Sierra Nevada, Tehachapi Mountains, and Southwestern Great Basin. Unpublished manuscript on file with Caltrans District 6 Office, Fresno.

Gates, T.

2012. Hidden Hills Solar Energy Generating Systems Ethnographic Report. California Energy Commission Docket 11-AFC-2, TN# 66701.

Gilreath, A.J.; Hildebrandt, W.R.

1997. Prehistoric Use of the Coso Volcanic Field. Contributions of the University of California Archaeological Research Facility, 56. University of California, Berkeley.

Golla, Victor

2011. California Indian Languages. University of California Press. Berkeley, Los Angeles and London.

2007. "Linguistic Prehistory." In California Prehistory. Colonization, Culture, and Complexity. Edited by Terry L. Jones and Katherine A. Klar. Alta Mira Press. UK.

Greene, Linda W.

1981. Death Valley National Monument, Historic Resources Study, A History of Mining, vol. I, Part 1, Section II. Historic Preservation Branch, Pacific Northwest/Western Team. Denver Service Center, National Park Service. Available at: http://www.nps.gov/history/history/online_books/deva/section2.htm. Accessed August 20, 2014.

Inyo County Parks Department (Inyo County Parks)

2001. "8.7 Cultural Resources" in Inyo County General Plan. Available at: http://ohp.parks.ca.gov/pages/1072/files/inyo.pdf. Accessed August 19, 2014

Jennings, Bill and Ralph Wyant

1976. The Tonopah and Tidewater Railroad. From Pacific News #55 (believed to be January 1976). Manuscript. Available at: http://www.ttrr.org/tt_text/ttpb_004.html. Accessed January 28, 2014.

Kawaiisu Language and Cultural Center

2013. "Home Page." Available at: http://www.kawaiisu.org/. Accessed July 18, 2014.

Kawaiisu Tribe of the Tejon Indian Reservation

2014. "Home Page- Constitution of the Kawaiisu Tribe of the Tejon Indian Reservation: Duties of Offices." Available at: http://www.angelfire.com/stars4/kawaiisu/. Accessed June 17, 2014

Kelly, Isabel T., and Catherine S. Fowler

1986. Southern Paiute. In Great Basin, edited by Warren L. D'Azevedo, pp. 368-397. Handbook of North American Indians, vol. 11, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Kvamme, K.L.

1985. "Determining Empirical Relationships Between the Natural Environmental and Prehistoric Site Locations: A Hunter-Gatherer Example." In For Concordance in Archaeological Analysis: Bridging Data Structure, Quantitative Technique, and Theory, edited by Christopher Carr, pp. 622. Westport Publishers: Institute for Quantitative Archaeology University of Arkansas, Kansas City, Mo. Fayetteville.

Lawrence, Amy

2009. "Keeping Their Language Alive: Kawaiisu Language and Cultural Center Launches Website." Alliance for California Traditional Arts. Available at: http://www.actaonline.org/content/keeping-their-language-alive-kawaiisu-language-and-cultural-center-launches-website. Accessed July 31, 2014.

Liljeblad, Sven, and Catherine S. Fowler

1986. Owens Valley Paiute. In Great Basin, edited by Warren L. D'Azevedo, pp. 412-434. Handbook of North American Indians, vol. 11, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Malouf, Carling I., and John M. Findlay

1986. Euro-American Impact before 1870. In Great Basin, edited by Warren L. D'Azevedo, pp. 368-397. Handbook of North American Indians, vol. 11, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Meridian Consultants

2014. "5.5 Cultural Resources." In ATV Adventure Trails of the Eastern Sierra Project Draft Environmental Impact Report. Available at: http://www.inyocounty.us/ab628/documents/5_5_Cultural_080414.pdf. Accessed August 17, 2014.

Meyer, Jack, D. Craig Young, and Jeffrey S. Rosenthal

2010. "Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9: Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways." Prepared and Edited by Far Western Anthropological Group, Inc. for California Department of Transportation.

Mikesell, Stephen D.

2000. California Historic Military Buildings and Structures Inventory. Volume II: the History and Historic Resources of the military in California, 1769-1989. JRP Historical Consulting Services, Davis, CA.

Musser-Lopez, R.A. and S. Miller

2010. "Archaeological Trails and Ethnographic Trails: Can They Meet?" SCA Proceedings, vol. 24. Society for California Archaeology.

Neal, Mark Lynton

2007. A Predictive Probabilistic Model of Village Site Location Within the Santa Ynez Valley, California. Master's Thesis, University of California Santa Barbara.

Norwood, Richard H., Charles S. Bull, and Ronald Quinn

1980. A Cultural Resource Overview of the Eureka, Saline, Panamint, and Darwin Region, East Central, California. Unpublished manuscript on file at RECON Environmental, 1927 5th Avenue, San Diego, CA.

National Park Service (NPS)

2014. "Owens Valley Paiute." Available at: http://www.nps.gov/manz/historyculture/owens-valley-paiute.htm. Accessed July 31, 2014

2002. Death Valley General Management Plan. Available at: http://www.nps.gov/deva/parkmgmt/upload/GMP_001.pdf. Accessed November 20, 2013.

2001. National Historic Trail Feasibility Study and Environmental Assessment: Old Spanish Trail. Available at: http://parkplanning.nps.gov/document.cfm?parkID=454&projectID=12591&documentID=38207. Accessed July 31, 2014.

Polson, Nikki

2009. Prehistoric human population dynamics in Owens Valley. Master's Thesis, Sacramento State University. Available at: http://csus-dspace.calstate.edu/handle/10211.9/657. Accessed July 31, 2014.

Rondeau, M., J. Cassidy, and T. Jones
2007. Colonization Technologies: Fluted Projectile Points and the San Clemente Island Woodworking/Microblade Complex. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, Lanham, MD: Altamira.

Steward, J.H.
1933. "Ethnography of the Owens Valley Paiute," Publications in American Archaeology and Ethnology, vol. 33, no. 3, pp. 233–350.

Strong, William Duncan
1929. Aboriginal Society in Southern California. University of California Publications in American Archaeology and Ethnology.

Sutton, Mark Q
2009. "People and Language: Defining the Takic Expansion into Southern California." Pacific Coast Archaeology Society Quarterly, vol. 41, Numbers 1 and 2. pp. 32-92.

Sutton, Mark Q., Mark E. Basgall, Jill K. Gardner, and Mark W. Allen
2007. Advances in Understanding Mojave Desert Prehistory. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar. Rowman Altamira Press.

Thomas, David Hurst, Lorann S.A. Pendleton, and Stephen C. Cappannari
1986. Western Shoshone. In Great Basin, edited by Warren L. D'Azevedo, pp. 262-283. Handbook of North American Indians, vol. 11, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Thompson, Erwin N.
1984. National Register of Historic Places Inventory – Nomination Form for Manzanar War Relocation Center. National Park Service.

Turner, George
1965. Brief Chronology of the Carson and Colorado Railroad. Excerpt from Narrow Gauge Nostalgia.

Ver Planck, W.E.
1958. Salt in California. California Division of Mines and Geology Bulletin 175. San Francisco, CA.

Warren, Claude N.
1984. The Desert Region. In California Archaeology, edited by Michael J. Moratto, pp. 339-430. Academic Press, San Diego, CA.

Warren, Claude N., and Robert H. Crabtree
1986. Prehistory of the Southwestern Area. In Warren L. D'Azevedo (ed.), Handbook of North American Indians, vol. 11, Great Basin, pp.183-193. Smithsonian Institution, Washington, D.C.

Zentner, Joe
2012. Desert USA: Borax and the 20-Mule Team: Death Valley National Park. Available at: http://www.desertusa.com/mag05/jul/borax.html. Accessed on July 9, 2014.

Zigmond, Maurice L.
1986. Kawaiisu. In Great Basin, edited by William l. D'Azevedo, pp. 398-411. Handbook of North American Indians, vol. 11, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

7.9 GEOLOGY AND SOILS REFERENCES

California Department of Water Resources (DWR)
2003. California's Groundwater. Bulletin 118, updated through February 2004.

California Energy Commission (CEC)
2012. Hidden Hills Solar Electric Generating System (HHSEGS). Final Staff Assessment. December.

California Geological Survey (CGS, formerly the California Division of Mines and Geology)
2010. Fault Activity Map of California. Geologic Data Map No. 6.

2007. Fault-Rupture Hazard Zones in California. Special Publication 42.

1977. Geologic Map of California. Geologic Data Map No. 2.

International Code Council
2006. International Building Code (IBC).

Inyo, County of (Inyo County)
2001. Inyo County General Plan. December, as amended through 2010.

Los Angeles Department of Water and Power (LADWP)
2013. Southern Owens Valley Solar Ranch Environmental Impact Report, Volumes I and III. August.

Natural Resource Conservation Service (NRCS)
2014. Natural Resources Conservation Service Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed on July 17, 2014.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

United States Geological Survey (USGS)

1991. The Groundwater Flow System in Indian Wells Valley, Kern, Inyo and San Bernardino Counties, California. Water Resources Investigations Report 89-4191.

7.10 GREENHOUSE GAS EMISSIONS REFERENCES

California Air Resources Board (CARB)

2014a. California Greenhouse Gas Inventory for 2000-2012. May. Available at: http://www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-12_report.pdf. Accessed on August 11, 2014.

2014b. First Update to the Climate Change Scoping Plan: Building on the Framework. Available at: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed on August 11, 2014.

2008. Climate Change Scoping Plan – A Framework For Change. December.

California Climate Action Registry

2009. California Climate Action Registry General Reporting Protocol Version 3.1, January.

California Climate Action Team (CAT)

2006. Final 2006 Climate Action Team Report to the Governor and Legislature. California Environmental Protection Agency, California Climate Action Team. March 2006.

California Natural Resources Agency

2009. California Climate Adaptation Strategy.

Desert Renewable Energy Conservation Plan (DRECP)

2014. Available at: http://www.drecp.org/. Accessed on September 26, 2014.

European Fluorocarbons Technical Committee

2003. Fluorocarbons and Sulphur Hexafluoride: Perfluorocarbons (PFCs) Fact Sheet. Available at: http://www.fluorocarbons.org/en/info/brochures/fact_10.html. Accessed on July 9, 2014.

Intergovernmental Panel on Climate Change (IPCC)
2007. "Summary for Policy Makers." In Climate Change 2007: The Physical Science Basis, eds. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, 1–18. A report of Working Group I of the Intergovernmental Panel on Climate Change. New York, New York: Cambridge University Press. Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

South Coast Air Quality Management District (SCAQMD)
2008. Draft Guidance Document – Interim CEQA GHG Significance Thresholds.

US Environmental Protection Agency (USEPA)
2014. Clean Energy Resources. Calculations and References. Available at: http://www.epa.gov/cleanenergy/energy-resources/refs.html. Accessed August 23, 2014.

2011a. "Climate Change – Greenhouse Gas Emissions: Carbon Dioxide." Available at: http://www.epa.gov/climatechange/emissions/co2.html. Accessed on August 14, 2014.

2011b. "Methane." Available at: http://www.epa.gov/methane/scientific.html.

2010a. "Nitrous Oxide." Available at: http://www.epa.gov/nitrousoxide/scientific.html.

2010b. "High Global Warming Potential Gases." Available at: http://epa.gov/highgwp/.

World Resources Institute
2014. CAIT 2.0: Climate Data Explorer. Available at: http://cait2.wri.org/wri/. Accessed on August 14, 2014.

7.11 HAZARDOUS MATERIALS REFERENCES

Aspen Environmental Group (Aspen)
2014. Renewable Energy General Plan Amendment, Opportunities and Constraints Technical Study. February.

CalEPA/Department of Toxic Substance Control (DTSC)
2014. EnviroStor Website Listings for Inyo County. Available at: http://www.envirostor.dtsc.ca.gov/public/search.asp?CMD=search&city=&zip=&county=inyo+&case_number=&business_name=&FEDERAL_SUPERFUND=True&STATE_RESPONSE=True&VOLUNTARY_CLEANUP=True&SCHOOL_CLEANUP=True&CORRECTIVE_ACTION=True&tiered_permit=True&evaluation=True&operating=True&post_closure=True&non_operating=True&inspections=True. Accessed on August 11, 2014.

California Department of Forestry and Fire Protection (CAL FIRE)

2014. CAL FIRE Fire Hazard Zones and Responsibility Areas for Inyo County. Available at: http://frap.fire.ca.gov/data/frapgismaps/sra13_2/sramap.14.pdf; http://frap.fire.ca.gov/webdata/maps/inyo/fhszl06_1_map.14.pdf.

California Energy Commission (CEC)

2012. Hidden Hills Solar Electric Generating System (HHSEGS). Final Staff Assessment. December.

Federal Aviation Administration (FAA)

2010. Technical Guidance for Evaluating Selected Solar Technologies on Airports. November.

Inyo, County of (Inyo County)

2014. Inyo County Local Transportation Commission. Overall Work Program, 2014/2015 Fiscal Year. Available at: http://www.inyoltc.org/pdfs/fowp14.pdf.

2008. Inyo County Hazardous Materials Area Plan. September. Available at: http://www.inyocounty.us/EnvironmentalHealth/pdf2/FINALInyoHMAP.pdf.

2001. Inyo County General Plan. December, as amended through 2010.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

State Water Resources Control Board (SWRCB)

2014. GeoTracker Website Listings for Inyo County. Available at: http://geotracker.waterboards.ca.gov/search.asp?PAGE=4&CMD=search&business_name=&main_street_number=&main_street_name=&city=&zip=&county=INYO&branch=&status=&site_type=&cleanup_type=&npl=&reporttype=&reporttitle=Inyo+County&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&permitted=&corrective_action=&spec_prog=&national_priority_list=&senate=&assembly=&critical_pol=&business_type=&case_type=&gwbasin=&display_results=&pub=&watershed=&ORDERBY=upper%28business_name%29&next=Next+50. Accessed on July 9, 2014.

7.12 HYDROLOGY AND WATER QUALITY REFERENCES

Aspen Environmental Group (Aspen)

2014. Renewable Energy General Plan Amendment, Opportunities and Constraints Technical Study. February.

California Department of Water Resources (DWR)

2003. California's Groundwater. Bulletin 118, updated through February 2004.

California Energy Commission (CEC)

2012. Hidden Hills Solar Electric Generating System (HHSEGS). Final Staff Assessment. December.

California Stormwater Quality Association

2009. Stormwater Best Management Practice Handbook Portal: Construction. November.

Federal Emergency Management Agency (FEMA)

2014a. FEMA Map Service Center. Inyo County, California and Unincorporated Areas. Available at: https://msc.fema.gov/portal/search?AddressQuery=inyo%20county%20ca. Accessed on July 17, 2014.

2014b. Review of the following Flood Insurance Rate Map (FIRM) panels: San Bernardino County and Incorporate Area panels dated August 28, 2008; o6o71C0075H, 06071C0100H and 06071C0525H; Kern County and Incorporate Area panels dated September 26, 2008; 06029C1015E, 06029C1018E, 06029C1019E, 06029C1020E, 06029C1038E, 06029C1045E, 06029C1557E, 06029C 1575E, 06029C1576E, 06029C1577E, and 06029C1600E. Available at: https://msc.fema.gov/portal. Accessed October 2, 2014.

2014c. FEMA Map Service Center. Clark County, Nevada and Unincorporated Areas. Panel Nos. 32003C2800E, and 32003C2450E. Available at: http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=76902603&IFIT=1. Accessed August 2, 2014.

Inyo, County of (Inyo County)

2014. Personal communication with Mr. Marvin Moskowitz, Environmental Health Manager. September 30.

2001. Inyo County General Plan. December, as amended through 2010.

Inyo County Register

2014. Inyo County Register Press Release, Bishop Creek Contamination Could Pose Health Risks, July 9. Available at: http://www.inyoregister.com/print/6136.

MHA Environmental Consulting
2008. Draft Environmental Impact Report for the Hay Ranch Water Extraction and Delivery System. July. Available at: http://www.inyowater.org/INDEX_DOCS/Hay%20Ranch%20Draft%20EIR_July_08.pdf.

Regional Water Quality Control Board (RWQCB) – Lahontan Region
1995. Water Quality Control Plan for the Lahontan Region, North and South Basins (Basin Plan). As amended through April 2014.

Renewable Energy Action Team (REAT)
2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

State Surface Water Ambient Monitoring Program (SWAMP)
2012. Toxicity in California Waters, Lahontan Region. August.

2007. Surface Water Ambient Monitoring Program (SWAMP) at the Lahontan Region: Summary of Results for Years 2000-2005. July.

State Water Resources Control Board (SWRCB)
2010. Clean Water Act Section 303(d) 2010 List of Water Quality Limited Segments. Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml Accessed on August 12, 2014.

Team Engineering & Management, Inc.
2014 Hay Ranch Project Conditional Use Permit Hydrologic Monitoring and Reporting, Second Quarter 2014, Inyo County, California. July 18. Available at: http://www.inyowater.org/coso/pdfs/HR%20CUP_Q2_2014.pdf.

US Geological Survey (USGS)
1991. The Groundwater Flow System in Indian Wells Valley, Kern, Inyo and San Bernardino Counties, California. Water Resources Investigations Report 89-4191.

Weather.com
2014a. Average Annual Precipitation Data for Bishop, CA. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0103. Accessed July 23, 2014.

2014b. Average Annual Precipitation Data for Olancha, CA. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0800. Accessed July 23, 2014.

Weather.com (cont.)

2014c. Average Annual Precipitation Data for Inyokern, CA. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0515. Accessed July 23, 2014.

2014d. Average Annual Precipitation Data for Lone Pine, CA. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0630. Accessed July 23, 2014.

2014e. Average Annual Precipitation Data for Trona, CA. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USCA1162. Accessed July 23, 2014.

2014f. Average Annual Precipitation Data for Pahrump, NV. Available at: http://www.weather.com/weather/wxclimatology/monthly/graph/USNV0072. Accessed July 23, 2014.

7.13 LAND USE AND PLANNING REFERENCES

Bureau of Land Management (BLM)

2006. Record of Decision, West Mojave Plan, Amendment to the California Desert Conservation Area Plan, March. Available at: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdfs/wemo_pdfs.Par.4dfb777f.File.pdf/wemo_rod_3-06.pdf. Accessed on October 6, 2014.

2005. Final Environmental Impact Report and Statement for the West Mojave Plan. January. Available at: http://www.blm.gov/ca/pdfs/cdd_pdfs/wemo_pdfs/plan/wemo/Vol-1-Chapter1_Bookmarks.pdf. Accessed on October 6, 2014.

Desert Renewable Energy Conservation Plan (DRECP)

2014. Desert Renewable Energy Conservation Plan. Available at: http://www.drecp.org/. Accessed August 15.

Inyo, County of (Inyo County)

2014. Inyo County Local Transportation Commission. Overall Work Program, 2014/2015 Fiscal Year. Available at: http://www.inyoltc.org/pdfs/fowp14.pdf. Accessed on July 29, 2014.

2001. Inyo County General Plan. December, as amended through 2010.

Los Angeles Department of Water and Power (LADWP)

2013. Southern Owens Valley Solar Ranch Draft, Environmental Impact Report: Volume I, SCH No. 2010091094. August.

7.14 MINERAL RESOURCES REFERENCES

Bureau of Land Management (BLM)
1980. The California Desert Conservation Area Plan.

California Energy Commission (CEC)
2012. Hidden Hills Solar Electric Generating System (HHSEGS). Final Staff Assessment. December.

California Geological Survey (CGS, formerly the California Division of Mines and Geology)
2013. Publications of the SMARA Mineral Land Classification Project Dealing With Mineral Resources in California.

1993a. Mineral Land Classification of the Eureka-Saline Valley Area, Inyo and Mono Counties, California. Special Report 166.

1993b. Mineral Land Classification of the Ash Meadows, Big Dune, Eagle Mountain, Funeral Peak, Ryan, Pahrump, and Stewart Valley 15-Minute Quadrangles and High Peak 7.5-Minute Quadrangle, Inyo County, California. Special Report 167.

1991. Mines and Mineral Prospects of the California Desert. Open-File Report 91-18.

Global Pumice, LLC
2014. Global Pumice Mine, Olancha, CA. Available at: http://mines.findthebest.com/l/5382/Owens-Lake-Mine. Accessed July 25, 2014.

Inyo, County of (Inyo County)
2001. Inyo County General Plan. December, as amended through 2010.

South Coast Geological Society
1980. Geology and Mineral Wealth of the California Desert. Dibblee Volume, Donald L. Fife and Arthur R. Brown, Editors. Published in conjunction with the October 11-12, 1980 SCGS Field Trip.
US Geological Survey (USGS)
2014. USGS Website, Minerals in Inyo County. Available at: http://search.usa.gov/search?affiliate=usgs&commit=Search&page=2&query=minerals+in+inyo+county&utf8=%E2%9C%93. Accessed July 21, 2014.

7.15 NOISE REFERENCES

California Department of Transportation (Caltrans)
2009. Technical Noise Supplement. November.

Federal Highway Administration (FHWA)
2006. Roadway Construction Noise Model User's Guide. January.

Federal Transit Administration (FTA)
2006. Transit Noise and Vibration Impact Assessment. May.

Inyo, County of (Inyo County)
2001. Inyo County General Plan. December, as amended through 2010.

Los Angeles Department of Water and Power (LADWP)
2013. Southern Owens Valley Solar Ranch Draft EIR. August.

Renewable Energy Action Team (REAT)
2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

San Diego, County of (San Diego County)
2014. Soitec Solar Development Project Draft PEIR. January.

USA.com
2014. Inyo County Weather. Available at: http://www.usa.com/inyo-county-ca-weather.htm. Accessed August 29, 2014.

Veneklasen Associates, Inc.
2004. Stagecoach Substation: Preliminary Environmental Study; Page 3.

7.16 POPULATION AND HOUSING REFERENCES

US Census Bureau (Census)
2010. 2010 Census Interactive Population Search. http://www.census.gov/2010census/popmap/index.php. Site accessed August 14, 2014.

7.17 PUBLIC SERVICES REFERENCES

CAL FIRE
2014. CAL FIRE. Available at: http://calfire.ca.gov/index.php. Accessed August 27, 2014.

2007. Fire Hazard Severity Zones in SRA for Inyo County. Available at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_inyo.php. Adopted November 7. Accessed on August 21, 2014.

California Highway Patrol (CHP)
2014. California Highway Patrol. Available at: http://www.chp.ca.gov/. Accessed August 27, 2014.

Inyo, County of (Inyo County)

2014. Parks and Recreation Department. Available at: http://www.inyocountycamping.com/. Accessed August 27, 2014.

2001. Inyo County General Plan Goals and Policies Report.

Inyo County Office of Education

2014. Inyo County Office of Education. Available at: http://www.inyo.k12.ca.us/home.aspx. Accessed August 18, 2014.

Inyo County Sheriff's Department (ICSD)

2014. Inyo County Sheriff's Department. Available at: http://www.inyocounty.us/so/. Accessed August 19, 2014.

Inyo County Volunteer Firefighters

2014. Inyo County Volunteer Firefighters. Available at: http://volunteerfirefighter.org/district.php?id=Inyo. Accessed August 19, 2014.

Northern Inyo Hospital

2014. Northern Inyo Hospital. Available at: http://www.nih.org/. Accessed August 27, 2014.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

Southern Inyo Healthcare District

2014. Southern Inyo Healthcare District. Available at: http://www.sihd.org/getpage.php?name=about. Accessed August 27, 2014.

7.18 RECREATION REFERENCES

Inyo County Parks and Recreation Department (Inyo County Parks)

2014. http://www.inyocountycamping.com/inyo_county_parks.html

National Park Service (NPS)

2006. National Park Service Management Policies.

7.19 SOCIOECONOMICS REFERENCES

Aspen Environmental Group (Aspen)

2014. Sample 100 MW Solar PV project in JEDI. Conducted August 20, 2014.

Bureau of Land Management (BLM)

2014. California Camping Frequently Asked Questions.

California, State of (California)

2014. California Revenue and Tax Code Section 73. http://law.onecle.com/california/taxation/73.html. Accessed August 20.

2008. Assembly Bill 1451. http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1451-1500/ab_1451_bill_20080928_chaptered.html. Accessed August 20, 2014.

2005. Assembly Bill 1099. http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_1051-1100/ab_1099_bill_20050906_chaptered.html. Accessed August 20, 2014.

California Department of Finance

2014a. Demographic Information: Population Projections for California and Counties 2000-2060. http://www.dof.ca.gov/research/demographic/reports/view.php#objCollapsiblePanelEstimatesAnchor. Accessed August 7, 2014.

2014b. Demographic Information: E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2013. http://www.dof.ca.gov/research/demographic/reports/view.php#objCollapsiblePanelEstimatesAnchor. Accessed August 7, 2014.

Inyo, County of (Inyo County)

2014a. Inyo County Population and Demographics. http://inyoplanning.org/demographics.htm. Accessed August 20, 2014.

2014b. 2013-2014 County Budget. http://www.inyocounty.us/Budget/2013-2014/Budget.html. Accessed August 7, 2014.

US Census Bureau (Census)

2014. Metropolitan and Micropolitan Statistical Areas Definitions. http://www.census.gov/population/www/metroareas/metroarea.html. Accessed August 8, 2014.

United States Forest Service (USFS)

2014. California Camping Frequently Asked Questions.

7.20 TRANSPORTATION AND CIRCULATION REFERENCES

Inyo County Local Transportation Commission

2009. Inyo County Regional Transportation Plan. April 22.

Renewable Energy Action Team (REAT)

2010. Best Management Practices and Guidance Manual for Desert Renewable Energy Projects. November.

7.21 UTILITIES REFERENCES

California Department of Resources Recycling and Recovery (CalRecycle)
2014. Solid Waste Information System (SWIS). Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/Default.htm. Accessed August 28, 2014.

Inyo County Environmental Health Services
2014. Inyo County Environmental Health Services. Available at: http://www.inyocounty.us/EnvironmentalHealth/drinking_water.html#water. Accessed August 28, 2014.

Inyo County Integrated Waste Management Department (ICIWMD)
2014. Inyo County Integrated Waste Management Department. Available at: http://www.inyocountysolidwaste.com/. Accessed August 28, 2014.

Inyo County Planning Department (Inyo County)
2013. Background Report: Renewable Energy General Plan Amendment. October 22.

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