C.6 Biological Resources

This section addresses whether the Revised Project would result in any new significant biological resources impacts that were not previously addressed in the 2010 Final EIR or whether and to what extent new information of substantial importance that was not available at the time the 2010 Final EIR was certified shows that the project would have a new or more severe significant biological resources impact. It considers changes to the existing biological resources in the study area, the reduced project footprint of the Approved Project, and changes to potential biological resource impacts and related mitigation measures.

The Approved Project for purposes of this SEIR is the project that the San Benito County Board of Supervisor's approved in November 2010. The Approved Project was analyzed in the 2010 Final EIR as "Alternative A Revised." As it applies to biological resources, the Approved Project was suggested by the Applicant following the 2010 Draft EIR as a way to avoid the highest density occupied giant kangaroo rat and blunt-nosed leopard lizard habitat and preserve this habitat through a conservation easement. See Sections A and B (Introduction and Project Description) for more details.

Under the Approved Project, the Applicant also acquired rights to an additional 10,900 acres of land in the southeast portion of the Panoche Valley known as the Silver Creek Ranch that would be preserved in perpetuity along with approximately 10,331 acres within the Valadeao Ranch, and 2,072 acres within the Valley Floor Conservation Lands, as proposed in the 2010 Final EIR. These mitigation lands are comprised of approximately 10,782 acres within the Panoche Valley that have slopes less than 11 percent contiguous with the Valley floor, are occupied by San Joaquin kit fox, giant kangaroo rat, and blunt-nosed leopard lizard, and are considered likely to contain the same genetically distinct populations of these species that occur on the Project site.

The County determined that through implementation of the refined mitigation measures, plus the preservation of an east-west habitat connectivity corridor, boundary impacts of the Approved Project on San Joaquin kit fox, blunt-nosed leopard lizard, and giant kangaroo rat would be less than significant (Class II). The County also determined that the Approved Project's contribution to cumulative impacts on upland species of the San Joaquin Valley would be mitigated to a less than significant level (Class II) through the implementation of Mitigation Measure BR-16.3 (Preserve, manage, and maintain giant kangaroo rat habitat corridors across the project footprint) and Mitigation Measure BR-23.1 (Create conservation easement on all project areas retired from the development footprint). These mitigation measures require the maintenance and monitoring of giant kangaroo rat habitat corridors and for the Applicant to place the approved project footprint into a biological conservation easement to be preserved in perpetuity when areas within the project footprint are retired.

Since the County's approval of the Approved Project, design and construction methodology has been further refined by the Applicant, resulting in an overall reduction in permanently disturbed areas and an increase in the mitigation lands. The Revised Project includes a 2,506-acre project area, reduced from 3,302 acres for the Approved Project and 4,885 acres for the Project as originally proposed in the 2010 EIR. Ground disturbance associated with Revised Project features would be reduced to a maximum of 1,888 acres from 2,303 acres. Finally, for the Revised Project preservation of the Valley Floor Conservation Area has been increased to 2,514 acres from the 2,072 acres described under the Approved Project. See Figure B-1 (Project Location, Section B) for mitigation lands.

C.6.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.6.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.6.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

C.6.1.1 Solar Project

The environmental setting for biological resources within the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. As described above, all ground disturbance for the Revised Project would occur within a smaller 2,506-acre portion of the previously surveyed 4,885-acre study area for the 2010 Approved Project (see Figure B-2, Revised Boundaries, Section B). The physical environmental conditions as well as the biological resources within the Revised Project site remain the same as those addressed for the Approved Project.

Substantial biological resource data has been collected by the Applicant since the analysis of the Approved Project in 2010. This additional information was independently reviewed in order to compile an accurate description of the baseline biological conditions for the Revised Project and to evaluate changes to potential biological resource impacts and related mitigation measures.

Biological resource data sources included, but were not limited to, the following:

- A search of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the Revised Project site,
- Aerial photographs, Geographic Information Systems (GIS) data, United States Geological Survey (USGS) topographic maps,
- Previously prepared reports and regional planning documents (general plan policies, Habitat Conservation Plans [HCPs], Environmental Impact Reports [EIRs], and published scientific literature),
- Additional studies conducted by agency and academic researchers related to key species, listed below, and
- The Applicant's technical reports and data (including vegetation mapping and special-status species locations and survey data) listed below.

Additional Studies by Agency and Academic Researchers

- Endicott, R. L., L. R. Prugh, and J. S. Brashares. 2014. Surplus-killing by endangered San Joaquin kit foxes (*Vulpes macrotis mutica*) is linked to a local population decline of endangered giant kangaroo rats (*Dipodomys ingens*). The Southwestern Naturalist. 59(1): 110-115. Online with subscription: http://www.bioone.org/doi/abs/10.1894/N01-JKF-39.1
- Bean, W. T., R. Stafford, H. S. Butterfield, J. S. Brashares. 2014. A Multi-scale distribution model for non-equilibrium populations suggests resource limitation in an endangered rodent. PLoS ONE. 9(9): e106638 doi: 10.1371/journal.pone.0106638.
- Prugh, L. R. and J. S. Brashares. 2012. Partitioning the effects of an ecosystem engineer: kangaroo rats control community structure via multiple pathways. Journal of Animal Ecology. 11/2011; 81(3): 667-78.

- Gurney, C., L. R. Prugh, and J. Brashares. 2011. Biotic soil disturbance and foraging behavior function at different scales in explaining the keystone effect of an endangered rodent. 96th ESA Annual Convention, 08/2011.
- Bean, W. T., R. Stafford, L. R. Prugh, H. Scott Butterfield, and J. S. Brashares. 2012. An evaluation of monitoring methods for the endangered giant kangaroo rat. Wildlife Society Bulletin. 36: 587-593. Doi: 10.1002/wsb.171.
- Bean, W. T., R. Stafford, and J. S. Brashares. 2012. The effects of small sample size and sample bias on threshold selection and accuracy assessment of species distribution models. Ecography, 35: 250-258. Doi: 10.111/j.1600-0587.2011.06545.x.
- Cypher, B. and C. Fiehler. 2014. San Joaquin Kit Fox Demography, Ecology, and Conservation in the Northern Carrizo Plains. California State University/California Department of Fish and Wildlife. Carrizo Colloquium Presentation. November 7, 2014.
- Illowsky, D. 2014. Long-term habitat management planning for the endangered blunt-nosed leopard lizard (Gambelia sila) in California's Central Valley. Brown University and University of California Santa Cruz.
- Prugh, L. and J. Brashares. 2014. Carrizo Plain Ecosystem Project. 2013 Annual report.

Reports and Survey Results Provided by the Applicant

These references are available on the Panoche Valley Solar Project page, accessed from the County's website home page: www.cosb.us/.

- Blunt-Nosed Leopard Lizard (BNLL) Avoidance Plan (April 2014)
- GKR Relocation Plan (November 2013)
- Antelope Squirrel Relocation Plan (April 2014)
- San Joaquin Kit Fox Conservation Measures (November 2013)
- BNLL Focused Survey, Silver Creek Ranch (Summer 2012); Camera Trapping for SJKF, Silver Creek Ranch (Summer/Fall 2012); Spotlighting for SJKF, Silver Creek Ranch (Summer/Fall 2012)
- Dry Season Branchipod Surveys (September 2010)
- Wet Season Branchipod Survey (2009-2010)
- Non-Protocol Branchipod Survey (April 2010)
- California Tiger Salamander Mitigation Pond Proposal (June 2012)
- Golden Eagle Use Survey (Fall and Winter 2013-2014)
- Golden Eagle Nesting Survey (Winter and Spring, 2014)
- Giant Kangaroo Rat Distribution Survey, Project Footprint and Conservation Lands (February/March 2013)
- BNLL Full Protocol Survey of Project Footprint and Valley Floor Conservation Lands (October 2013)
- Abbreviated BNLL Survey of Target Area on Project Footprint, Summer 2014
- California Tiger Salamander Relocation Plan (November 2014)
- Transmission Line Natural Resources Assessment Report (October 2014)

C.6.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) between the Panoche Valley Solar Project site and the existing Panoche Substation. They also include construction of up to three new microwave communication towers and

upgrades to one existing microwave tower. The environmental setting for these upgrades includes the area surrounding the Moss Landing–Panoche 230 kV transmission line between the Project site and the Panoche Substation, Call Mountain (west of the Panoche Valley), Panoche Mountain (northeast of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Mendota).

C.6.1.2.1 Regional Setting

The PG&E Upgrades would be located in eastern San Benito and western Fresno Counties in the Panoche Valley, Panoche Hills, and San Joaquin Valley. Topography is variable, ranging from the Panoche Valley floor in the west into the steep and highly dissected terrain of the Panoche Hills and then into the San Joaquin Valley floor at the eastern extent. The elevation ranges from approximately 1,280 feet above mean sea level near the west end of the route to approximately 1,410 feet at the highest point in the Panoche Hills, to approximately 406 feet above mean sea level near the east end. The PG&E route traverses rangeland, agricultural, and developed areas. Panoche Creek and several unnamed washes are located throughout and adjacent to the sites of the proposed upgrades.

Like much of California, the PG&E route and surroundings experience a Mediterranean climate with dry hot summers and cool wet winters. However, this region does not experience heavy rainfall, and is characterized as high desert. Annual precipitation in the general vicinity of the proposed PG&E Upgrades ranges between 8 and 10 inches, almost 85 percent of which falls between October and March. Nearly all precipitation falls in the form of rain. Stormwater runoff readily infiltrates the soils; when field capacity[1] has been reached, gravitational water flows into the creeks and drainages. See Figure C.6-1a through Figure C.6-1d (Biotic Habitat for PG&E Optical Ground Wire Installation). All figures are presented at the end of this section.

C.6.1.2.2 Baseline Data Collection

The approach for the PG&E route analysis was the same as the SEIR; to utilize all available data related to biological resources, and to independently review, verify, and supplement these data in order to compile a concise and accurate description of the baseline biological conditions. This data is summarized below and is primarily based on surveys conducted by Energy Renewal Partners, LLC between 15 and 18 September 2014 and H. T. Harvey & Associates (HTH) on 7 and 10 November 2014.

Literature Search and Review of Existing Data

The assessment of biological resources for the PG&E route began with a review of all available documents and species and habitat data provided by the Applicant, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and other agencies. Biological resource data sources included, but were not limited to, the following:

- A search of the CDFW California Natural Diversity Database (CNDDB) was conducted to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the route,
- Aerial photographs, Geographic Information Systems (GIS) data, United States Geological Survey (USGS) topographic maps,

[1] Field water capacity or *field capacity* (FC) is the upper limit of the *available soil water* (AW) reservoir, from which water can be released but not necessarily absorbed by plants (Springer, 2014).

- Previously prepared reports and regional planning documents (general plan policies, Habitat Conservation Plans [HCPs], Environmental Impact Reports [EIRs], and published scientific literature)
- The Applicant's technical reports and data (including vegetation mapping and special-status species locations and survey data; detailed below)

C.6.1.2.3 Vegetation Communities

The following section describes the methodology for the following: conducting the background botanical literature review; mapping vegetation communities and series occurring on the site; conducting reconnaissance-level vegetation surveys during other biological surveys; identifying potentially occurring special-status plant species; and conducting focused surveys for special-status plant species on the proposed project site.

Energy Renewal Partners and HTH biologists reviewed seven U.S. Geological Survey (USGS) 7.5-minute topographic maps from which the proposed route lies, an aerial photograph of the route and surrounding area (NAIP, 2005), the Soil Survey for San Benito County (NRCS, 1969), the Soil Survey for San Benito County, Panoche Valley Area (NRCS, 2003) and the Soil Survey for Fresno County, Western Part (NRCS, 2006). The California Natural Diversity Database (CNDDB, 2014) was searched prior to conducting surveys for the locations of special-status plant species occurrences within the Cerro Colorado, Mercey Hot Springs, Panoche, Tumey Hills, Chounet Ranch, Chaney Ranch, and San Benito topographic quadrangles and the nineteen surrounding quadrangles, including Cherry Peak, Panoche Pass, Bickmore Canyon, Llanada, North Chalone Peak , Topo Valley, Rock Spring Peak, Laguana Seca Ranch, Hammonds Ranch, Ruby Canyon, Hernandez Reservoir, Idria, Ciervo Mountain, Monocline Ridge, Levis, Coit Ranch, Firebaugh, Broadview Farms, and Ortigalita Peak. The CNDDB search also provided locations of sensitive natural communities, and confirmed the absence of designated critical habitat for federally listed plant species from the vicinity of the proposed upgrades.

Additional special-status plant species information, such as information on potential occurrence along the route and ecological requirements, was obtained by reviewing previous biological reports for the area, the species list for the Clear Creek Management Area Draft Resource Management Plan (BLM, 2009), and databases of rare plant records maintained by the CNPS on-line Inventory of Rare and Endangered Plants (2014), CalFlora (2014), and the Consortium of California Herbaria (CCH, 2014). The special-status plant species list generated from database queries, literature review, and consultations was cross-referenced with habitat and soil types present on the route to create a refined list of special-status plant species known to occur, or with potential to occur, at the PG&E upgrade sites.

Botanical Surveys

Existing vegetation communities were described for the proposed route by Energy Renewal Partners and HTH using data collected during field assessment surveys between September 15-18, 2014 and November 7, 2014. Areas of planned ground disturbance plus a 500-foot buffer were surveyed to evaluate for state and federal jurisdictional waters and sensitive species known to occur in San Benito and Fresno Counties.

The Energy Renewal Partners survey was conducted based on planned work areas provided by PG&E as of September 15, 2014. However, modifications were made regarding the locations of certain work areas after that time. HTH conducted site visits on November 7 and November 10, 2014, during which the majority of the work areas were visited, including the additional areas.

The Energy Renewal Partners survey team walked in evenly-spaced transects, ensuring 100 percent visual coverage of the work areas. There are several special-status plants known to occur in the vicinity of the PG&E upgrade route. Surveyors evaluated the PG&E upgrade route for indications/signs of the absence or presence of the following federally endangered, federally threatened, and/or California fully protected species or their habitats: San Benito evening primrose (*Camissonia benetensis;* FT, CRPR 1B.1), California jewelflower (*Caulanthus californicus,* FE, SE, CRPR 1B.1), and San Joaquin woollythreads (*Monolopia congdonii,* FE, CRPR 1B.2). In addition to these federally endangered, federally threatened, and/or California fully protected species, surveyors evaluated the PG&E upgrade route for indications/signs of the absence or presence of other special-status species or their habitats. However, due to the timing of the surveys and the life history of the species, the three federally endangered, federally threatened, and/or California fully protected species and the majority of the other special-status species would likely not have been detectable or identifiable to the species level. The potential presence of those special-status species within the PG&E upgrade route based upon existing biotic and abiotic conditions is noted in Table C.6-1 (Special-Status Plant Species with Potential to Occur) and Table C.6-2 (Special-Status Wildlife Species with Potential to Occur).

Table C.6-1. Special-Status Plant Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Rationale
Amsinckia furcata	Forked fiddleneck	CRPR 4.2	High	Suitable habitat is present and the species is known from the area. Species is known to occur within 1 mile of the project site.
Androsace elongata ssp. *Acuta*	California androsace	CRPR 4.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Antirrhinum ovatum	Oval leaved snapdragon	CRPR 4.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Astragalus macrodon	Salinas milk vetch	CRPR 4.3	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Astragalus rattanii var. jepsonianus	Jepson's milk vetch	CRPR1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Atriplex cordulata var. *cordulata*	Heartscale	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Atriplex coronata var. *coronata*	Crownscale	CRPR 4.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Atriplex coronata var. *vallicola*	Lost Hills crownscale	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Atriplex depressa	Brittlescale	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Atriplex joaquiniana	San Joaquin spearscale	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Atriplex minuscula	Lesser saltscale	CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Atriplex subtilis	Deltoid bract saltbush	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Blepharizonia plumosa	Big tarplant	CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
California macrophylla	Round leaved filaree	CRPR 1B.1	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Camissonia benitensis	San Benito evening primrose	FT, CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Campanula exigua	Chaparral harebell	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Caulanthus californicus	California jewelflower	FE, SE, CRPR 1B.1	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.

Table C.6-1. Special-Status Plant Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Rationale
Caulanthus lemmonii	Lemmon's wild cabbage	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Chorizanthe ventricosa	Priest Valley spineflower	CRPR 4.3	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Chloropyron molle ssp. *Hispidum*	Hispid bird's-beak	CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Deinandra halliana	Hall's tarplant	CRPR 1B.1	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Delphinium californicum ssp. *interius*	California larkspur	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Delphinium gypsophilum ssp. *Gypsophilum*	Pinoche Creek larkspur	CRPR CBR	High	Suitable habitat is present. Species is known to occur on the PVSP.
Delphinium recurvatum	Recurved larkspur	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Eriastrum hooveri	Hoover's eriastrum	CRPR 4.2	High	Suitable habitat is present. Species known to occur approximately 15 miles east and 12 miles north of the project site.
Eriogonum gossypinum	Cottony buckwheat	CRPR 4.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Eriogonum nudum var. inductum	Naked buckwheat	CRPR 4.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Eriogonum temblorense	Temblor buckwheat	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Eriogonum vestitum	Idria buckwheat	CRPR 4.3	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Fritillaria falcata	Talus fritillary	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Fritillaria viridea	San Benito fritillary	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Lagophylla diabolensis	Diablo Range hare leaf	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Layia discoidea	Rayless layia	CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Layia heterotricha	Pale yellow layia	CRPR 1B.1	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.

Table C.6-1. Special-Status Plant Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Rationale
Layia munzii	Munz's tidy tips	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Lepidium jaredii ssp. *album*	Panoche pepper grass	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Leptosiphon ambiguus	Serpentine leptosiphon	CRPR 4.2	High	Suitable habitat is present. Species is known to occur east of the PVSP.
Madia radiata	Golden madia	CRPR 1B.1	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Malacothamnus aboriginum	Gray bushmallow	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Monolopia congdonii	San Joaquin woollythreads	FE, CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Navarretia nigelliformis ssp. *Radians*	Adobe navarretia	CRPR 1B.2	Moderate	Generally suitable habitat is present on the project site; however, specific microhabitat conditions ideal for the species are unlikely to be present.
Navarretia prostrata	Prostrate navarretia	CRPR 1B.1	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Phacelia phacelioides	Mt. Diablo phacelia	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Senecio aphanactis	California groundsel	CRPR 2B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.
Streptanthus insignis ssp. *lyonii*	Arburua Ranch jewel flower	CRPR 1B.2	Low	The species is known to occur in the nine quads surrounding the project site. However, suitable habitat is unlikely to occur within disturbance limits.

FE = Federally Endangered. SE = State Endangered. CRPR = California Rare Plant Rank
1B = Plants that are rare, threatened, or endangered in California and elsewhere. 4 = A watch list of plants of limited distribution.
0.1: Seriously endangered in California. 0.2: Fairly endangered in California. 0.3: Not very endangered in California.

Table C.6-2. Special-Status Wildlife Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Potential to Occur Details
Invertebrates				
Branchinecta longiantenna	longhorn fairy shrimp	FE	Not Likely To Occur	No suitable habitat (vernal pools or ponds) present
Branchinecta conservatio	Conservancy fairy shrimp	FE	Not Likely To Occur	No suitable habitat (vernal pools or ponds) present
Branchinecta lynchi	vernal pool fairy shrimp	FT	Not Likely To Occur	No suitable habitat (vernal pools or ponds) present
Branchinecta packardi	vernal pool tadpole shrimp	FE	Not Likely To Occur	No suitable habitat (vernal pools or ponds) present
Reptiles				
Actinemys marmorata pallida	Southwestern pond turtle	CSC	Low	Marginal habitat present; species has not been documented on the project site
Anniella pulchra pulchra	silvery legless lizard	CSC	Moderate	Suitable habitat present; species has not been documented on the project site
Gambelia sila	blunt-nosed leopard lizard	FE, SE, SFP	Present	Suitable habitat present; species observed in Valley Floor Conservation Lands during 2013 surveys
Masticophis flagellum ruddocki	San Joaquin coachwhip	CSC	High	Suitable habitat present; CNDDB records of this species within 10 miles of the project site
Phrynosoma blainvillii	coast horned lizard	CSC	High	Suitable habitat present; recent (2010) observations of this species by LOA in the vicinity of Panoche Creek
Thamnophis hammondii	two-striped garter snake	CSC	Not Likely To Occur	No suitable habitat present; species has not been documented on the project site
Amphibians				
Ambystoma californiense	California tiger salamander	FT,ST	High	Suitable upland habitat present; suitable wetland aquatic habitat may be present outside the survey area but within dispersal distance of the species
Rana draytonii	California red-legged frog	FT	Not Likely To Occur	No suitable habitat present; species has not been documented on the project site
Spea hammondii	western spadefoot toad	CSC	Moderate	Suitable habitat present, no CNDDB records of this species within 10 miles of the project, and species has not been detected on any of the recent surveys conducted in 2009 and 2010
Birds				
Agelaius tricolor	tricolored blackbird	SE, CSC	Present (non-breeding)	Suitable foraging habitat present, suitable nesting habitat absent; species has been observed on ste (non-breeding), and a known colony occurs approximately 8 miles north of the project

Table C.6-2. Special-Status Wildlife Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Potential to Occur Details
Ammodramus savannarum	grasshopper sparrow	CSC	Moderate	Suitable habitat present; species has been documented nesting in the project vicinity; however, no CNDDB records of this species within 10 miles of the project, and it has not been detected on surveys to date
Aquila chrysaetos	golden eagle	SFP	Present (non-breeding)	Suitable foraging habitat present; species has been observed in the immediate vicinity
Asio flammeus	short-eared owl	CSC	Moderate	Marginally suitable habitat present; species has nested in the vicinity in the past following exceptional rain years; however, it has not been detected on surveys to date
Asio otus	long-eared owl	CSC	Moderate	Suitable foraging habitat and marginally suitable nesting habitat present; species has not been detected on surveys to date
Athene cunicularia	Burrowing owl	CSC	Present	Suitable habitat present; sign (white wash and pellets) observed
Buteo swainsonii	Swainson's hawk	ST	Present	Suitable habitat present; species has been observed in the vicinity
Charadrius montanus	mountain plover	CSC Proposed rule to list the species as federally threatened was withdrawn on May 11, 2011.	Present (winter only)	Suitable winter habitat present; CNDDB records and recent survey observations in the footprint
Circus cyaneus	northern harrier	CSC	Present (non-breeding)	Suitable foraging habitat present; this species has been observed in the area
Elanus leucurus	white-tailed kite	SFP	Low	Suitable habitat present; no CNDDB records of this species in the vicinity, and it has not been detected on surveys to date
Gymnogyps californianus	California condor	FE, SE	Low	Suitable foraging habitat present; no CNDDB records in the project vicinity, and no observations on surveys to date
Haliaeetus leucocephalus	bald eagle	SE, FP	Not Likely To Occur	No suitable habitat present; species has not been documented on the project site
Lanius ludovicianus	Loggerhead shrike	CSC	Present (non-breeding)	Suitable habitat present; species has been observed on site
Pooecetes gramineus affinis	Oregon vesper sparrow	CSC	High (winter only)	Suitable winter foraging habitat present

Table C.6-2. Special-Status Wildlife Species with Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur	Potential to Occur Details
Xanthocephalus xanthocephalus	yellow-headed blackbird	CSC	Not Likely to Occur	Marginal habitat present; species has not been documented on the project site
Mammals				
Ammospermophilus nelsoni	San Joaquin antelope squirrel	ST	Present	Suitable habitat present; species has been observed on the project site
Antrozous pallidus	pallid bat	CSC	High (foraging)	Suitable foraging habitat present; CNDDB records within 10 miles of the project site
Corynorhinus townsendii	Townsend's big-eared bat	STC, CSC	Low (foraging)	No known maternity colonies in the vicinity; no CNDDB records within 10 miles of the project site
Dipodomys ingens	giant kangaroo rat	FE, SE	Present	Suitable habitat present; active precincts observed
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat	CSC	High	Suitable habitat present
Dipodomys elephantinus	big-eared kangaroo rat	CSC	Not Likely To Occur	No suitable habitat present; species has not been documented on the project site
Eumops perotis	western mastiff bat	CSC	Moderate (foraging)	Suitable foraging habitat present; CNDDB records within 10 miles of the project site
Onychomys torridus tularensis	Tulare grasshopper mouse	CSC	High	Suitable habitat present
Taxidea taxus	American badger	CSC	Present	Suitable habitat present; known dens observed
Vulpes macrotis mutica	San Joaquin kit fox	FE, ST	Present	Suitable habitat present; known dens and sign (scat) observed

FE = Federally Endangered.
FT = Federally Threatened
SE = State Endangered
SFP = State Fully Protected
CSC = California Species of Special Concern
STC = State Threatened Candidate
FTC = Federally Threatened Candidate

Biotic Habitats

Six vegetation community-landform types were observed on the PG&E upgrade route: Annual Brome Grassland, Allscale Saltbush Scrub, Ephemeral Drainages, Orchard, Vineyard, and Disturbed/Developed. Ephemeral pools were not observed, but have the potential to occur in this area. Annual Brome Grassland, Ephemeral Drainages, and Ephemeral Pools are described in the 2010 Final EIR, and therefore only Allscale Saltbush Scrub, Orchard, Vineyard, and Disturbed/Developed are discussed in detail below.

The habitats in the western PG&E upgrade route are predominantly annual, non-native grasslands grazed by livestock. The timing of the survey was not adequate to identify the presence of wildflower field communities, which are dominated by numerous species of native annual wildflowers in the spring (Sawyer and Keeler-Wolf, 1995).

Allscale saltbush scrub habitat dominated the central portion of the PG&E upgrade route. Dominant shrub species observed by Energy Renewal Partners during the field assessment survey include:

- Allscale saltbush (*Atriplex polycarpa*)
- California ephedra (*Ephedra californicus*)
- Interior goldenbush (*Ericameria linearifolia*)
- California matchweed (*Guitierrezia californica*)
- California buckwheat (*Eriogonum fasciculatum*)

Prominent grasses include:

- Mediterranean grass (*Schismus arabicus*)
- red brome (*Bromus madritensis*)

Dominant forbs[2] include:

- red-stemmed filaree (*Erodium cicutarium*)
- vinegarweed (*Trichostema lanceolatum*).
- shining peppergrass (*Lepidium nitidum* var. *nitidum*)
- angle-stem wild buckwheat (*Eriogonum angulosum*)
- wirelettuce (*Stephanomeria pauciflora*)
- common fiddleneck (*Amsinckia intermedia*)

The eastern portion of the PG&E route was disturbed due to the development of agricultural (e.g. almond and pomegranate orchard, vineyard) and transportation (disturbed/developed) purposes. The Panoche Mountain, Call Mountain, and Helm Microwave Communication Towers are located on developed habitat. Other than planted species, vegetation observed was minimal and consisted of ruderal species. Prominent grass species observed in agricultural habitats by Energy Renewal Partners, LLC during the field assessment survey include:

- red brome *(Bromus madritensis)*
- California brome *(Bromus carinatus)*

Dominant forbs include:

[2] Forbs are vascular plants without significant woody tissue above or at the ground. Forbs and herbs may be annual, biennial, or perennial but always lack significant thickening by secondary woody growth. (USDA, 2014)

- red-stemmed filaree (*Erodium cicutarium*)
- cheeseweed (*Malva parviflora*)
- common fiddleneck (*Amsinckia intermedia*)
- nightshade (*Solanum xanti*)
- procumbent pigweed (*Amaranthus blitoides*)
- tumbling orach (*Atriplex rosea*)
- bindweed (*Convolvulus arvensis*)
- lamb's quarters (*Chenopodium album*)
- doveweed (*Croton setigerus*)
- jimson weed (*Datura wrightii*)
- Russian thistle (*Salsola tragus*)

Disturbed/developed habitat is either unvegetated (e.g. roads) or sparse ruderal species also observed in agricultural habitat described above. The exception is a wire stringing site and two guard structure locations adjacent to I-5 contained ruderal species along with planted red gum (*Eucalyptus camaldulensis*) trees and alkali goldenbush shrubs.

Several ephemeral drainages occur throughout the PG&E upgrade areas, including the federally jurisdictional Panoche Creek and several unnamed washes. Ephemeral drainages are often productive habitats supporting a large diversity of both common and sensitive plant and animal species.

C.6.1.2.4 Common Wildlife

The following section describes the methods used to identify potentially occurring special-status wildlife species along the PG&E route.

Wildlife Surveys

Energy Renewal Partners, LLC conducted a field assessment survey of the PG&E upgrade route from 15 to 18 September 2014. Areas of planned ground disturbance plus a 500-foot buffer were surveyed to evaluate for sensitive species. The Energy Renewal Partners, LLC survey was conducted based on planned work areas provided by PG&E as of September 15, 2014. However, modifications were made regarding the locations of certain work areas after this date. HTH conducted site visits on 7 and 10 November 2014, during which the majority of the work areas were visited, including the additional areas.

Field assessments used a transect sampling system whereby parallel transects spaced 30-meters (m) apart were evaluated by four biologists for the presence of sensitive species known to occur in the habitats found in the PG&E upgrade route in San Benito and Fresno Counties. Suitable vegetative conditions and resources for some special-status species were observed within the PG&E upgrade route during the field assessment. This does not provide evidence of presence or absence of the species but does give an indication of the potential for the species to occur or be observed within the PG&E upgrade route during seasonally timed surveys.

C.6.1.2.5 Special-Status Species

Special-Status Plants

The PG&E route has the potential to support over 45 species of listed or special-status plant species, as defined in Table C.6-1.

Potential for occurrence is defined as follows:

- **Present:** Species or sign of their presence recently observed on the site.
- **High:** Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.
- **Moderate:** Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.
- **Low:** Species or sign not observed on the site, and conditions marginal for occurrence.
- **Not likely to occur:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

San Benito Evening primrose, California Jewelflower, San Joaquin Woollythreads, and other Special-Status Plants

Energy Renewal Partners did not conclusively identify any special-status plant species within the PG&E upgrade route. However, sensitive vegetative species were particularly difficult to identify to the species level during the survey, due to the time of year and lack of flowers present. One potential rare plant was observed from the genus *Navarretia*, which includes 56 different species, 22 of which are considered rare in the State of California. This observation occurred in the southern portion of the study area buffer, outside of the planned ground disturbance areas for Wire Pull Sites 3, 4, and 5.

Special-Status Wildlife and Invertebrate Species

Surveyors evaluated the PG&E upgrade route for indications/signs of the absence or presence of the following federally and/ or state endangered, threatened, and/or California fully protected species or their habitats: longhorn fairy shrimp, conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, blunt-nosed leopard lizard, California red-legged frog, California tiger salamander, tricolored blackbird, golden eagle, white-tailed kite, California condor, giant kangaroo rat, San Joaquin antelope squirrel, Townsend's big-eared bat, and San Joaquin kit fox. In addition to these federally and/ or state endangered, federally threatened, and/or California fully protected species, surveyors evaluated each the PG&E upgrade route for indications/signs of the absence or presence of other special-status species or their habitats.

Eight state or federally listed wildlife species or wildlife species proposed for listing have been documented or have the potential to occur in the proposed PG&E Upgrades project area and are discussed below. Additionally, the route has the potential to or currently supports the 10 California Species of Special Concern described below. Many of these species also have the potential to occur within the Revised Project and/or in the western portions of the PG&E route immediately east of the Revised Project.

Potential for occurrence is defined as follows:

- **Present:** Species or sign of their presence recently observed on the site.
- **High:** Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.
- **Moderate:** Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.
- **Low:** Species or sign not observed on the site, and conditions marginal for occurrence.

- **Not likely to occur:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

Vernal Pool Fairy Shrimp and California Red-legged Frog. No ephemeral pools suitable for Branchiopods or suitable aquatic habitat for California red-legged frog was identified on the PG&E upgrade route during the surveys.

California Tiger Salamander. No ephemeral pools or ponds suitable for breeding habitat were identified in the PG&E upgrade route. However, the survey area was limited to a 500-foot buffer surrounding impact sites. California tiger salamanders are known to travel up to 1.2 miles from their breeding ponds to estivate; no survey for potential California tiger salamander breeding ponds was completed as part of the September 2014 survey. Therefore, without a larger radius breeding pond survey, it has to be assumed that California tiger salamander could estivate within the appropriate sized small mammal burrows within the PG&E upgrade route.

Blunt-Nosed Leopard Lizard. No blunt-nosed leopard lizards were observed by Energy Renewal Partners during the 15 to 18 September 2014 survey of the PG&E upgrade route. Even though no individual blunt-nosed leopard lizards were observed, due to the terrain, evidence of sufficient small mammal burrows, the studies being performed outside the protocol season window, and the overall vegetative conditions and resource availability within the PG&E upgrade route, blunt-nosed leopard lizards could potentially occur within work areas at Study Area 1 through 7 within lands that have not been developed for intensive agriculture.

Burrowing Owl. Surveys found evidence of burrowing owl northeast of the wire pulling site located southeast of pole 237. White wash was observed at several fence posts and pellets at one post. Due to existing vegetative conditions and resource availability, including evidence of sufficient small mammal burrows, burrowing owls could occur within work areas.

Golden Eagle, White-tailed Kite, and California Condor. No evidence of nesting special-status raptor species was located within the PG&E upgrade route with exception of Swainson's hawk and burrowing owl, as noted elsewhere.

Swanson's Hawk. Surveyors from Energy Renewal Partners observed two dead juvenile Swainson's hawks adjacent to Interstate 5 in the PG&E upgrade route. The hawks are assumed to have been killed by traffic. No nests were located within the PG&E upgrade route. However, the species is known to nest and forage in the Central Valley east of I-5 in the vicinity of the upgrade route.

Giant Kangaroo Rat. Surveyors observed multiple active and inactive giant kangaroo rat precincts in the vicinity of 3 potential pull sites along the western extent of the PG&E upgrade route, in the vicinity of Pole 64, 51, and 35. The remaining pull sites, particularly in along the eastern extent of the route, either do not support suitable habitat for the species, or the habitat is of low quality and the species is not expected to occur within these areas. Based on the surveys of the route, the condition and density of the burrows within areas with suitable vegetation; resource conditions appear sufficiently low enough that burrows could be avoided.

San Joaquin Kit Fox, San Joaquin Antelope Squirrel, and American Badger. Surveys identified evidence of San Joaquin kit fox, San Joaquin antelope squirrel, and American badger at multiple locations within the PG&E upgrade route. This included kit fox latrines, potential tracks, and one den where prey remains were observed. The majority of the PG&E route supports suitable vegetative and resource conditions for these species. Based on the surveys of the route, the condition and density of the dens and burrows

within areas with suitable vegetation, resource conditions appear sufficiently low that dens and burrows could be avoided.

C.6.1.2.6 Jurisdictional Waters

Literature Search

Prior to conducting the field investigation of the PG&E upgrade route, Energy Renewal Partners and HTH reviewed existing information on the proposed route and vicinity, including USGS topographic maps, aerial photography, National Wetland Inventory (NWI) maps, and soil surveys of the PG&E upgrade route. These information sources were examined to determine locations of potential areas of U.S. Army Corps of Engineers (USACE) jurisdiction. The Natural Resources Conservation Service (NRCS) Web Soil Survey was used to identify soil types within the PG&E upgrade route. Potential jurisdictional areas were evaluated using methodology set forth in the *Routine Determination Method* in the USACE 1987 Wetlands Delineation Manual (Environmental Laboratory, 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (*Regional Supplement* USACE, 2008b), and the Ordinary High Water Mark Manual (USACE, 2010).

Survey and Delineation of Wetlands and Other Waters of the U.S.

Potentially federal and state jurisdictional waters were assessed in the field for the PG&E upgrade route and associated ground disturbance areas. From November 15-18, 2014, Energy Renewal Partners conducted field investigations of the PG&E upgrade route to determine the presence of potentially jurisdictional Waters of the United States (including wetlands) that would likely be subject to regulation by USACE under Section 404 of the Clean Water Act. The Energy Renewal Partners survey was conducted based on planned work areas provided by PG&E as of September 15, 2014. However, modifications were made regarding the locations of certain work areas after this time. HTH conducted site visits November 7 and 10, 2014, during which the majority of the work areas were visited, including the additional areas.

The only areas identified by Energy Renewal Partners to have jurisdictional waters within the PG&E upgrade route were within the expanded survey buffer in the vicinity of Panoche Creek. However, these potential jurisdictional areas associated with Panoche Creek are not located in the vicinity of any planned disturbance area within the PG&E upgrade route. Existing access roads cross approximately 0.002 acres of ephemeral drainages along the route. These areas may require a temporary crossing for construction vehicles.

C.6.2 Applicable Regulations, Plans, and Standards

Existing laws and regulations relevant to biological resources were described in the 2010 Final EIR. No changes have occurred to these laws or regulations since 2010; therefore, the majority of the regulatory setting for biological resources remains unchanged. However, the PG&E Upgrades associated with the Revised Project are partially located in Fresno County. Therefore, the information provided below has been included as new plan applicable to the Revised Project.

Fresno County General Plan

The Fresno County General Plan (2010) is a comprehensive, long-term framework for the protection of the County's agricultural, natural, and cultural resources and for development in the County. Designed to meet State general plan requirements, it outlines policies, standards, and programs and sets out plan proposals to guide day-today decisions concerning the County's future. The General Plan establishes

broad goals, policies and thresholds of significance for specific elements that guide countywide development. Policies within the Open Space and Conservation Element applicable to biological resources include the following:

- **Policy OS-F.1** The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.
- **Policy OS-F.2** The County shall require developers to use native and compatible non-native plant species, especially drought-resistant species, to the extent possible, in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for project mitigation.
- **Policy OS-F.3** The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.
- **Policy OS-F.4** The County shall ensure that landmark trees are preserved and protected whenever possible.
- **Policy OS-F.5** The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.
- **Policy OS-F.6** The County shall require that development on hillsides be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion.
- **Policy OS-F.7** The County shall require developers to take into account a site's natural topography with respect to the design and siting of all physical improvements in order to minimize grading.
- **Policy OS-F.8** The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.
- **Policy OS-F.9** The County shall support the continued use of prescribed burning to mimic the effects of natural fires to reduce fuel volumes and associated fire hazards to human residents and to enhance the health of biotic communities.
- **Policy OS-F.10** The County shall require that new developments preserve natural woodlands to the maximum extent possible.
- **Policy OS-F.11** The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines shown below and to prepare an Oak Management Plan for their property.

C.6.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project result in any new significant biological resources impacts or increase the severity of previously identified biological impacts. Section C.6.3.1 restates the significance criteria used in 2010 to determine whether any changes result in any

new or more severe significant impacts. Section C.6.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.6.3.3 presents and updated impact analysis for the Revised Project, and Section C.6.3.4 addresses changes to adopted mitigation measures. Section C.6.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.6.3.6 describes cumulative impacts.

C.6.3.1 Significance Criteria

These significance criteria have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic (PV) facilities in general, and the full range of potential impacts related to this project in particular. These are the same significance criteria as were used in the 2010 Final EIR.

To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the proposed project and alternatives. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for biological resources were derived from previous environmental impact assessments and from the CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX). An impact would be considered significant and would require mitigation if it would:

- Criterion BIO1: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or FWS.
- Criterion BIO2: Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species.
- Criterion BIO3: 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 CDFG or FWS.
- Criterion BIO4: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marshes, vernal pools, etc.) through direct removal, filling, hydrological interruption, or other means.
- Criterion BIO5: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Criterion BIO6: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.
- Criterion BIO7: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

Significance conclusions are presented regarding the significance of each identified biological resources impact, per the significance classification system provided in Section C.1 (Introduction to Environmental Analysis).

C.6.3.2 Approved Project Impacts and Mitigation Measures

Table C.6-3 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-1: Construction activities would result in temporary and permanent losses of native vegetation	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan. **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **AQ -1.1:** Reduce fugitive dust
BR-2: The project could result in the establishment and spread of noxious weeds, invasive and non-native plants	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site.
BR-3: The project could disturb special-status plant species or their habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR-3.1:** Conduct pre-construction surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and implement avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-4: The project would cause the loss of foraging habitat for wildlife	Class III	None required.
BR-5: The project could alter the hydric and solar regimes in the area potentially eliminating required food sources for various species of wildlife	Class II	**AQ-1.1:** Reduce fugitive dust. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-6: Construction activities, including the use of access roads, grading, and heavy equipment, would result in disturbance to wildlife and may result in wildlife mortality	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR- 6.1:** Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-7: The project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR- 6.1:** Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures. **BR- 7a.1:** Impacts to all potential breeding habitat for western spadefoot toad shall be avoided to the extent feasible. **BR- 7a.2:** Conduct focused pre-construction surveys for San Joaquin coachwhip and coast horned lizard and implement avoidance measures. **BR-7c.1:** Conduct focused pre-construction surveys for short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse and implementation of avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-8: The project could result in the loss of vernal pool fairy shrimp, and loss of occupied vernal pool fairy shrimp habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-8.1:** Complete full protocol-level surveys of ephemeral pools. **BR-8.2:** Avoid disturbance to ephemeral pools occupied by vernal pool fairy shrimp to the maximum extent practicable, and mitigate for any unavoidable impacts. **BR-8.3:** Avoid seasonal depressions and known waterbodies. **AQ-1.1:** Reduce fugitive dust.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-9: The project could result in the loss of individual California tiger salamanders or the permanent or temporary loss of CTS habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-9.1:** Conduct pre-construction surveys for California tiger salamander and implement avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-10: The project could result in the loss of individual blunt -nosed leopard lizards and their habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-10.1:** Conduct pre-construction surveys for blunt-nosed leopard lizard and implement avoidance measures **AQ-1.1:** Reduce fugitive dust.
BR-11: The project will result in loss of habitat for wintering mountain plovers	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **AQ-1.1:** Reduce fugitive dust.
BR-12: The project could result in the loss foraging habitat for golden eagles, California condors, and other special-status raptors	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR- 6.1:** Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures. **BR-12.2:** Avoid and report California condors. **AQ-1.1:** Reduce fugitive dust.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-13: The project could result in the loss of burrowing owl, loss of foraging habitat for burrowing owl and loss of occupied burrowing owl habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-13.1:** Focused pre-construction burrowing owl surveys and implementation of avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-14: The project could result in electrocution or collision with overhead wires by State and/or federally protected birds	Class II	**BR-14.1:** Implement Avian Power Line Interaction Committee guidelines (APLIC). **BR-14.2:** Prepare and implement a Bird Monitoring and Avoidance Plan[3].
BR-15: The project could result in mortality of, and loss of habitat for, special-status bat species	Class II	**BR-G.1:** Implement a Worker Environmental Education Program. **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **AQ-1.1:** Reduce Fugitive Dust. **BR-15.1:** Survey pre-construction for any maternity colony or hibernaculum for sensitive bats. **BR-15.2:** Provide substitute roosting habitat, should any roosting habitat be identified onsite in the future. **BR-15.3:** Exclude bats prior to eviction from roosts.
BR-16: The project could result in the loss of giant kangaroo rat, loss of foraging habitat, and loss of occupied habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR-16.1:** Conduct focused pre-construction giant kangaroo rat burrow/precinct surveys and implement avoidance measures. **BR-16.2:** Minimize impacts of foundation support installations**.** **BR-16.3:** Establish functional giant kangaroo rat habitat corridors across the project footprint **AQ-1.1:** Reduce fugitive dust.

[3] The 2010 Final EIR referred to a Bird Monitoring and Avoidance Plan, the name of the plan has changed to Avian Conservation Plan in this Supplemental EIR.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-17: The project could result in the loss of San Joaquin antelope squirrel, loss of foraging habitat, and loss of occupied habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR- 17.1:** Conduct focused pre-construction surveys for San Joaquin antelope squirrel surveys and implement avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-18: The project could result in mortality of, and loss of habitat for American badgers	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR- 18.1:** Conduct focused pre-construction surveys for American badger surveys and implementation of avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-19: The project could result in the loss of San Joaquin kit fox, loss of foraging habitat, and loss of occupied habitat	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **BR-19.1:** Conduct focused pre-construction San Joaquin kit fox surveys and implementation of avoidance measures. **AQ-1.1:** Reduce fugitive dust.
BR-20: The project could result in the loss of jurisdictional wetland habitats	Class II	**BR-G.1:** Implement a Worker Environmental Education Program **BR-G.2:** Implement Best Management Practices. **BR-G.3:** Develop and implement a Habitat Restoration and Revegetation Plan **BR-G.4:** Implement biological construction monitoring. **BR-G.5:** Create permanent conservation easements as compensation for impacts to biological resources. **BR-G.6:** Develop and implement Habitat Mitigation and Monitoring Plan for mitigation lands. **BR-1.1:** Prepare and implement a Weed Control Plan. **BR-1.2:** Develop and implement a Grazing Plan for the project site. **AQ-1.1:** Reduce fugitive dust.

Table C.6-3 Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
BR-21: The project would result in Polarized Light Pollution that may result in negative effects on plant and wildlife communities	Class III	None required.
BR-22: The project could result in the exposure of wildlife to toxic trace elements and high salt concentrations in the waste water evaporation pond	Class II	**MM BR-22.1:** Fence evaporation pond to keep wildlife out
BR-23: Contribute to cumulatively considerable effects on biological resources	Class II	**MM BR-23.1:** Create conservation easement on all project areas retired from the development footprint **BR-16.3:** Establish functional giant kangaroo rat habitat corridors across the project footprint All other mitigation measures for biological resources.

C.6.3.3 Solar Project Impacts

The following impacts from the 2010 Final EIR are found to be either less severe due to Revised Project changes or not substantially different from the conclusions of the 2010 Final EIR for the Approved Project. Any incidental take of federal or State-listed as threatened or endangered species would be permitted through issuance of a Biological Opinion in consultation with the USFWS and through a Section 2081 Incidental Take Permit in consultation with CDFW. See Figure C.6-2 for an overview of special-status species observations on the Revised Project site and the mitigation lands.

Impact BR-1: Construction activities would result in temporary and permanent losses of native vegetation (Class II)

The following three vegetation community-landform types that were described in the 2010 Final EIR remain present within the Revised Project footprint: Annual Brome Grassland, Ephemeral Drainages, and Ephemeral Pools.

Although the overall areas of ground disturbance to these habitats are reduced under the Revised Project, the direct and indirect effects from the development of the Revised Project are the same as those identified in the 2010 Final EIR. Specifically, these effects include the following:

- Up to 1880.14 acres of Annual Brome Grassland would be permanently lost due to project impacts and an additional 618 acres may be temporarily impacted.
- Up to 7.86 acres of Ephemeral Drainage would be permanently lost due to project impacts
- At least 15 known Vernal Pools (0.26 acres) would be permanently and/or temporarily impacted.

Annual Brome Grassland. Annual Brome Grassland is not considered a sensitive habitat. The permanent loss of 1,880 acres of this habitat, and the other indirect and temporary impacts would affect a negligible proportion of the regional availability of this habitat type. However, loss of this habitat may affect special-status species. Temporarily impacted areas would be revegetated following project construction, with the goal of re-establishing grassland, equal in habitat quality to existing grassland, within one season following revegetation (previously adopted Mitigation Measure BR-G.3). Ongoing maintenance activities during project operations would not result in a substantial reduction in the availability of this habitat type. Therefore, project-specific impacts to Annual Brome Grassland habitat

are expected to remain less than significant (Class III). The significance of the loss of Annual Brome Grassland as habitat for special-status species is addressed in subsequent sections on a species by species basis.

Ephemeral Drainages. Ephemeral Drainages are unique hydrogeomorphic landforms that collect and convey flows through the Project site during and immediately following precipitation events, but they do not support large wetlands or long-lived pools. Many of these drainages fall under U.S. Army Corps of Engineers (Power Engineers, 2009 and Johnson-Marigot, 2014) and CDFW jurisdiction, and blunt-nosed leopard lizard, a fully protected species, has been detected in this habitat on adjoining conservation lands (see Impact BR-20 below for a discussion on potential direct, indirect effects, and mitigation measures). Although the Revised Project footprint avoids many areas of Ephemeral Drainages, permanent disturbance areas overlap with 7.86 acres of this habitat.

While Ephemeral Drainages are relatively common in parts of the Panoche Valley, much of this habitat has been lost or degraded over the last several decades due to development, off-road vehicle paths, and agricultural practices. Ephemeral Drainages play an important role in conveying surface flows during the rainfall season to other habitats located down slope that support special-status plants and animals. Unlike seasonal wetlands, ephemeral pools, and other wetlands that can provide water for longer periods, Ephemeral Drainages typically provide surface water for such a brief period that Ephemeral Drainages on the Project site receive little use by aquatic or amphibious species. Due to the extent of the impacts associated with solar array development and the permanent nature of impacts to this habitat in many areas spread over the Revised Project site, impacts to Ephemeral Drainages would remain significant. Furthermore, Ephemeral Drainages on the Revised Project site serve as habitat for a number of special-status species. Species-specific impacts are discussed below. Also, see Impact BR-20 for a discussion of impacts to Ephemeral Drainages in the context of impacts to potentially jurisdictional habitats.

Ephemeral Pools. Ephemeral Pools are depressions that pond water for only a portion of the year. Numerous Ephemeral Pools occur in low areas associated with Ephemeral Drainages and on compacted soil along unpaved roads. These habitats remain relatively abundant within the 2,506-acre Revised Project footprint and may provide habitat for sensitive wildlife species (discussed below). If avoidance of an Ephemeral Pool(s) is not possible then direct and indirect impacts to these features would be potentially significant.

Vernal Pools. Vernal Pools are shallow ephemeral water bodies found in depressions (which can be small or up to several hectares in size) among grasslands and open woodlands throughout the northern Central Valley of California. Vernal pools are identified by the CDFW (2010) as a sensitive natural community, and up to 15 known pools have identified vegetative and hydrological indicators representative of Vernal Pools (0.26 acres).

The removal and alteration of Vernal Pools on-site may reduce the number of plant and animal species within the project vicinity. At least one bermed stock pond within the Revised Project footprint serves as habitat for vernal pool fairy shrimp (*Branchinecta lynchii*, discussed below), and significance determinations for impacts to habitat of this species are described separately. The modification or destruction of Vernal Pools within the Revised Project site would constitute an adverse effect on this community, and these impacts would be potentially significant.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and

Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or Habitat Management Plan is developed and implemented for mitigation lands. Mitigation Measures BR-1.1 and BR-1.2 would require development of a Weed Control Plan and a Grazing Plan. Implementation these mitigation measures would reduce impacts of the Revised Project to less than significant levels (Class II).

Impact BR-2: The project could result in the establishment and spread of noxious weeds, invasive and non-native plants (Class II)

The Revised Project would not create any new risks associated with the establishment and spread of noxious weeds or invasive and non-native plants. As with the Approved Project, the Revised Project could result in the establishment and spread of additional noxious weeds and invasive and non-native plants as a result of Project-related soil disturbance, including temporary disturbances such as grading for temporary road construction. Because the Revised Project would require less soil disturbance than the Approved Project, this impact would be reduced.

The spread of existing exotic weed populations or the establishment of new exotic weed populations, as a result of project activities, are essentially permanent due to the substantial degradation of native habitats within and surrounding the impact areas. Therefore this impact would remain potentially significant. However, implementation of previously recommended and adopted Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. In addition, previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.4 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; and (4) Biological construction monitoring is implemented. These mitigation measures would reduce impacts related to the establishment and spread of invasive weeds to a less than significant level (Class II).

Impact BR-3: The project could disturb special-status plant species or their habitat (Class II)

No new special-status plants or habitat have been identified on the Revised Project site. As described in the 2010 Final EIR, three special-status plants have been identified within the Project study area: gypsum loving larkspur (*Delphinium gypsophilum* ssp*. gypsophilum*; CRPR 4.2), recurved larkspur (*Delphinium recurvatum*; CRPR 1B.2), and serpentine linanthus (*Leptosiphon ambiguus*; CRPR 4.2). None of these species are listed as threatened or endangered.

Two plant species listed under the Federal and/or California Endangered Species Acts that could potentially occur on the Revised Project site, are the federally and state-endangered California jewel-flower (*Caulanthus californicus*) and the federally endangered San Joaquin woollythreads (*Monolopia congdonii*).

Live Oak Associates performed comprehensive, site-wide botanical surveys for special-status plant species in September and October of 2009 and in March, April, May and June of 2010, a year of above average rainfall. The survey methods were consistent with CDFW protocols. The surveys were also timed to maximize potential observations of special-status species that may occur on the site. Surveys were designed and scheduled based on multiple consultations with CDFW and regional botanical experts, and visits to special-status plant species reference sites. No federal or state listed plant species were found during these surveys. No plants that could be confused with either San Joaquin woollythreads or

California jewelflower were found in 2010. The latest 2010 survey detected four widely scattered individuals that are classifiable as the recurved larkspur (CRPR List 1B), three populations of gypsum-loving larkspur (CRPR List 4) and four populations of serpentine leptosiphon (CRPR List 4).

As stated in the 2010 Final EIR, impacts to a small portion of a population (i.e., a few individuals) of plants that are not federally or State-listed, or impacts to a population for which loss of a local population would not substantially affect the range of the species, are not typically considered significant impacts under CEQA. However, if it is found that proposed project impacts would permanently disturb or remove a regionally large or important population, the impact could be significant. Few populations of gypsum loving larkspur, recurved larkspur, and serpentine linanthus were detected within the project area. Furthermore, the distribution and abundance of these species within the Panoche Valley is not well understood. Therefore, impacts to populations of these species would be potentially significant.

However, previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. In addition, previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. With the implementation of these measures, impacts on special-status plants would be less than significant.

Impact BR-4: The project would result in the loss of foraging habitat for wildlife (Class III)

While the overall area of ground disturbance to suitable wildlife foraging habitat has been reduced under the Revised Project, the direct and indirect effects from the development of the Revised Project on foraging habitat would be largely the same as those identified in the 2010 Final EIR.

As described in the 2010 Final EIR, the project site is dominated by Annual Brome Grassland, which provides limited structural heterogeneity, and there are no permanent natural wetland features. As a result, the diversity of wildlife species utilizing the site is fairly limited compared to areas with greater habitat complexity, such as those with perennial water sources or more extensive cover of trees or shrubs. The site does, however, provide habitat for a number of native, grassland-associated species. Note that individual special-status wildlife species are addressed in separate impact discussions.

The project site remains a relatively small proportion of regional habitat for common wildlife species, and likewise supports a relatively small proportion of regional populations of these more common wildlife species. As a result, project related impacts resulting in the loss of foraging habitat for these common species remains less than significant (Class III) as the Revised Project would not result in substantial reduction in the species' populations or range restrictions.

Impact BR-5: The project could alter the hydric and solar regimes in the area potentially eliminating required food sources for various species of wildlife (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent.

As described in the 2010 Final EIR, impermeable surfaces created by solar panel arrays and cement slab foundations for the transformers and inverters, switchyard, and buildings would alter hydric and solar regimes through reduced solar radiation and the interception and concentration of precipitation.

Some areas within the Revised Project site would receive no direct precipitation, while other areas along the margins of panels would experience increased volumes and flows. In addition, soil conditions would be altered through removal and replacement of top soil, grading, trenching, and compaction; edge effects created by permanent structures; changes in plant species composition within temporarily impacted areas that are reseeded; and changes in land management that include grazing with sheep or goats that prefer different forage than cattle. These changes in solar and hydric regimes would cause potentially significant changes in vegetation composition, cover, and structure.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or Habitat Management Plan is developed and implemented for mitigation lands. Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. In addition, Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. These mitigation measures would reduce impacts resulting from changes in hydric and solar regimes on the Revised Project site to less than significant levels (Class II).

Impact BR-6: Construction activities, including the use of access roads, grading, and heavy equipment, would result in disturbance to wildlife and may result in wildlife mortality (Class II)

The construction activities at the Revised Project site, while occurring within a smaller project footprint, may still result in mortality of wildlife species. Because of the shorter construction schedule for the Revised Project (18 months instead of 5 years), Project traffic would be much greater during construction, but would occur over a much shorter period of time.

The direct and indirect effects from the development of the Revised Project would be essentially the same as those identified in the 2010 Final EIR. Habitat clearing, earth removal, grading, trenching, equipment movement, placement of the direct-driven steel post foundations, placement of the panel rows, placement of the inverter/transformer pads and equipment, and construction of the buildings and switchyard would have a substantial impact on less mobile wildlife species. Small mammals, amphibians and reptiles, eggs and nestlings of bird species with well-hidden nests would be particularly vulnerable. Note that individual special-status wildlife species are addressed in separate impact discussions.

Although the Revised Project Site represents a relatively small proportion of regional habitat and regional populations of the more common wildlife species that would be impacted by construction activities, the footprint of the Revised Project would cover 2,506 acres. Construction of the Revised Project would permanently alter 1,888 acres within the Revised Project footprint. Furthermore many populations of common wildlife species in the Panoche Valley are relatively geographically isolated from other populations. Due to these factors, construction of the project would result in potentially significant impacts to a large number and variety of wildlife species.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best

Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or Habitat Mitigation Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and previously recommended and adopted Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. In addition, previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. Finally, previously recommended and adopted Mitigation Measure BR-6.1 would require pre-construction surveys for nesting and breeding birds and the implementation of avoidance measures. With the implementation of these mitigation measures, impacts to common wildlife species would be less than significant level (Class II).

Impact BR-7: The project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. No additional species have been identified with the potential to occur within the Revised Project. Sections below discuss impacts to various special-status species.

Impact BR-7a: Amphibians and Reptiles (Class II)

The Revised Project site remains suitable habitat for Western spadefoot (*Spea hammondii*), San Joaquin coachwhip (*Coluber flagellum ruddocki*), and Coast horned lizard (*Phrynosoma blainvillii*). These species could occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to permanent project impacts, and an additional 618 acres would be temporarily impacted.

Due to the small population sizes and relatively restricted range of these species, the injury or mortality of more than a few individuals or substantial loss or degradation of habitat as a result of permanent or temporary construction-related disturbances would remain a potentially significant impact.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and previously recommended and adopted Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. In addition, previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. previously recommended and adopted Mitigation Measure BR-7a.1 would also require avoidance to potential breeding habitat for western spadefoot toad to the extent feasible, and previously recommended and adopted Mitigation Measure BR-7a.2 would require pre-construction surveys for San Joaquin coachwhip and coast horned lizard. Implementation of these mitigation measures would reduce impacts to amphibian and reptile California Species of Special Concern to less than significant levels (Class II).

Impact BR-7b: Birds (Class II)

The Revised Project site remains suitable foraging and/or breeding habitat for nine species of birds considered by CDFW to be California Species of Special Concern. Two of these species, mountain plover and burrowing owl, are discussed separately under impacts BR-11 (mountain plover) and BR-13 (burrowing owl). The seven remaining species, which are either known to occur or may potentially occur on the proposed project site, include the Long-eared owl (*Asio otus*), Short-eared owl (*Asio flammeus*), Loggerhead shrike (*Lanius ludovicianus*), Grasshopper sparrow (*Ammodramus otus*), Tricolored blackbird (*Asio otus*), Northern harrier (*Circus cyaneus*), and Oregon vesper sparrow (*Pooecetes gramineus affinis*).

These species could occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to permanent project impacts and an additional 618 acres would be temporarily impacted.

Since 2010, avian monitoring studies have been initiated at several solar sites, providing additional data related to avian use during the construction and operation of solar facilities. Studies and observations at the California Valley Solar Ranch (CVSR) site suggest a reduction of overall activity rates within the solar facility for raptors after construction, as compared to offsite control plots (H. T. Harvey & Associates [HTH] 2013a). For other special-status species of birds, the influence of construction activities was not as distinct as it was for raptors. Construction activities often appeared to result in increased rather than decreased activity levels compared to offsite areas and control plots, with numerous avian species (e.g., horned larks [*Eremophila alpestri*], loggerhead shrikes, and tricolored blackbirds) being observed regularly foraging and roosting/perching in the grasslands within the arrays and directly underneath the solar panels during and following project development (HTH, 2013a).

Cavity-dwelling birds may be attracted to uncapped vertical pipes as potential nesting or refugia cavities, and may become trapped in these pipes, resulting in injury and mortality. Recently, significant attention has been paid to bird fatalities within open mine markers (American Bird Conservancy, 2011). Prior to the implementation of avoidance measures and an eventual change in the type of support structures, fatalities were also detected in open vertical piles during construction of at CVSR (HTH, 2012). If open vertical piles/pipes are used during construction, or during operations, large numbers of such piles could pose a substantial mortality risk to cavity-nesting and -dwelling birds.

The Revised Project has the potential to impact individuals of avian Species of Special Concern, impede movement, and alter occupied habitat. Field surveys have only confirmed the presence of loggerhead shrikes and tricolored black birds on the Project site; however, due to the extent of suitable habitat, the overlap of these species' ranges with the Panoche Valley and historic (CNDDB) records, it is likely that all of these species may at least occasionally occur on the Revised Project site. Any potential for injury, mortality, or disturbance (particularly of nesting birds), or substantial loss or degradation of habitat as a result of permanent or temporary construction-related activities would constitute a potentially significant impact.

Previously recommended and adopted Mitigation Measure BR-14.1 would require implementing the APLIC guidelines, which would reduce impacts to birds by reducing or minimizing collision and electrical risk. The required Avian Conservation Strategy (previously recommended and adopted Mitigation Measure BR-14.2, as revised) would require the Applicant to conduct long term avian fatality studies on the project site in coordination and subject to approval from the USFWS and CDFW. Implementation of these measures, as well as the implementation of previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6, BR-1.1, BR-1.2, AQ-1.1, BR-6.1 (Conduct pre-construction surveys for

nesting and breeding birds and implementation of avoidance measures), and BR-7b.1 (Conduct pre-construction surveys for non-breeding birds) would reduce impacts to less than significant levels (Class II). In addition to these measures, the Applicant has prepared an Avian Conservation Strategy which contains protective measures for the species consistent with Mitigation Measure BR-14.2. The Avian Conservation Strategy is subject to approval from the USFWS and CDFW.

Tricolored blackbirds. On December 3, 2014, the California Fish and Game Commission voted to enact emergency protections under the California Endangered Species Act for tricolored blackbirds. This emergency protection is valid for 180 days while CDFW evaluates the petition and decides whether or not to recommend permanent listing to the Commission. The petition presented to the Fish and Game Commission provided evidence of steep population declines in tricolored blackbird populations based on statewide surveys that documented a 62% decline in a population from 2008 to 2014 (a decline from 395,000 to 145,000 individuals).

The tricolored blackbird nests in colonies near fresh water, preferably in emergent wetlands with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Recently, colonies have also been found in grain and silage crops. The species forages on the ground in croplands, grassy fields, and flooded land, and along edges of ponds. Nesting habitat for tricolored blackbirds is absent from the Revised Project site; however, they are known to forage on the site, and there is a large colony at Little Panoche Reservoir, approximately 8 miles north of the Project site.

The Revised Project has the potential to impact individual tricolored blackbirds and alter foraging habitat. Field surveys and public data bases (eBird 2014) have confirmed the presence of tricolored blackbirds foraging on the Revised Project site. Studies and observations at one solar site within annual grassland habitat documented that construction activities often appeared to result in increased rather than decreased activity levels compared to offsite areas and control plots, with numerous avian species (e.g., horned larks [*Eremophila alpestri*], loggerhead shrikes, and tricolored blackbirds) being observed regularly foraging and roosting/perching in the grasslands within solar arrays and directly underneath the solar panels during and following project development (HTH 2013a). Changes in foraging habitat are not expected to result in habitat degradation resulting in a range restriction or a reduction in numbers of the species.

Injury or mortality of individual tri-colored blackbirds as a result of permanent or temporary construction-related activities would constitute a potentially significant impact, which was discussed and analyzed in the 2010 Final EIR. Previously recommended and adopted Mitigation Measure BR-14.1 would require implementing the APLIC guidelines, which would reduce impacts to birds by reducing or minimizing collision and electrical risk. The required Avian Conservation Strategy (previously recommended and adopted Mitigation Measure BR-14.2, as revised) would require the Applicant to conduct long term avian fatality studies on the project site subject to coordination and approval from the USFWS and CDFW. Implementation of these measures, as well as the implementation of previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6, BR-1.1, BR-1.2, AQ-1.1, BR-6.1 (Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures), and BR-7b.1 (Conduct pre-construction surveys for non-breeding birds) would reduce impacts to less than significant levels (Class II). In addition to these measures, the Applicant has prepared an Avian Conservation Strategy which contains protective measures for the species consistent with Mitigation Measure BR-14.2. The Avian Conservation Strategy is subject to approval from the USFWS and CDFW.

Impact BR-7c: Mammals (Class II)

The Revised Project site remains suitable habitat for four species of mammals considered by CDFW to be California Species of Special Concern. One of these species, the American Badger, is addressed separately under Impact BR-18.

The three remaining mammalian Species of Special Concern that potentially occur on the proposed project site are the Short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*), San Joaquin pocket mouse (*Perognathus inornatus inornatus*), and Tulare grasshopper mouse (*Onychomys torridus tularensis*). These species could occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to permanent project impacts and an additional 618 acres would be subject to temporary impacts.

The Revised Project has the potential to impact individuals of these species, impede their movement, and alter occupied habitat, which was an impact analyzed in the 2010 Final EIR. Field surveys have not confirmed the presence of these species at the Revised Project site. However due to the extent of suitable habitat, the overlap of these species' ranges with the Panoche Valley, and historic (CNDDB) records, these species may nevertheless occur. The potential for injury, mortality, disturbance, or substantial loss or degradation of habitat as a result of permanent or temporary construction-related activities would constitute a potentially significant impact. Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Implementation of previously recommended and adopted Mitigation Measure BR-1.1 and 1.2, (which would reduce impacts to vegetation thereby reducing impacts to foraging habitat), and BR-7c.1 (pre-construction surveys for short-nosed kangaroo rat, San Joaquin pocket mouse, and Tulare grasshopper mouse) would reduce impacts to less than significant levels (Class II).

Impact BR-8: The project could result in the loss of vernal pool fairy shrimp, and loss of occupied vernal pool fairy shrimp habitat (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR. As described in the 2010 Final EIR, surveys for vernal pool habitats conducted within the Approved Project area revealed a large number of pools within the project area (LOA, 2010). LOA identified 128 ephemeral pools on the site with a total area of approximately 2.79 acres (121,734.50 ft^2). These aquatic features were sampled for Branchiopods during the 2009-2010 rainy season in accordance with Interim Survey Guidelines for Permittees Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act of the Listed Vernal Pool Branchiopods (USFWS, 1996). Wet season surveys identified vernal pool fairy shrimp from one of these pools, located within the northwest portion of the Project site, west of Little Panoche Road. Additionally, there is a CNDDB (2014) record from 1989 of vernal pool fairy shrimp observed within a 10-mile radius of the project site.

After the publication of the 2010 Final EIR, LOA completed a second season of vernal pool branchiopod surveys (LOA, 2010a and 2010b). Dry season surveys were conducted September 27-30, 2010 during which soil samples from 117 ephemeral pools was collected and analyzed for the presence of branchiopod cysts. An additional non-protocol survey was conducted on April 14, 2010 during which

seven pools were sampled. Dry season sampling found cysts in two adjacent pools, one of which was also found to be occupied by vernal pool fairy shrimp during previous wet season sampling. Therefore, these cysts are likely vernal pool fairy shrimp. Development of the Revised Project has the potential to impact vernal pool fairy shrimp individuals and alter or destroy occupied habitat. Field surveys have identified the presence of vernal pool fairy shrimp in three ephemeral pools, all of which occur within the Revised Project footprint. Potentially suitable habitat (ephemeral and vernal pools) was identified throughout much of the project site.

Due to the presence of vernal pool fairy shrimp at the Revised Project site and the unique habitat requirements of these species, the loss of occupied vernal pool fairy shrimp habitat, and the loss of individuals (including eggs) as a result of construction, or O&M activities, would be a significant impact. Implementation of previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; and (4) Biological construction monitoring is implemented. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. Previously recommended and adopted Mitigation Measure BR-8.2 would require avoiding disturbance of ephemeral pools to the maximum extent practicable and mitigating for unavoidable impacts. Previously recommended and adopted Mitigation Measure BR-8.3 would require creating a 100-foot construction buffer for seasonal depressions and known waterbodies. Implementing these mitigation measures would reduce impacts to vernal pool fairy shrimp to less than significant levels (Class II).

Impact BR-9: The project could result in the loss of individual California tiger salamanders or the permanent or temporary loss of CTS habitat (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. Much of the Revised Project site would still provide suitable upland habitat for California tiger salamander.

As described in the 2010 Final EIR, California tiger salamanders were detected in two off-site stock ponds during surveys conducted by LOA in 2010. One of these stock ponds is immediately outside of the northwestern border of the Revised Project site and the other is located south of the western-most corner of the site. No other observations of California tiger salamander were made during surveys even though several pools of suitable size and depth for California tiger salamander were sampled. There are CNDDB (2014) records of occurrence of the species at the north end of the Project site; one was detected in a bermed pool of a tributary of Las Aguilas Creek, and another was observed north of the Project site in a bermed pool of a tributary of the south fork of Little Panoche Creek. Including the bermed pond located immediately outside of the northwest portion of the site (where California tiger salamanders were found), there are five bermed pools on the project site that could provide breeding habitat for California tiger salamanders; three are in the drainage in the northern section of the site, one in the grassland west of the County Road, and one is approximately 1 mile north of the south boundary and east of the County Road.

Development of the Revised Project could result in injury and mortality of individual California tiger salamanders (including larvae), substantial habitat losses and modifications, and changes in the composition and distribution of small mammal species, on whose burrows California tiger salamanders rely for cover and periods of dormancy. The degradation and loss of upland habitat and the potential loss of individuals as a result of construction and O&M activities would remain a potentially significant impact to California tiger salamanders.

However, previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or Habitat Management Plan is developed and implemented for mitigation lands. In addition, previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition, previously recommended and adopted Mitigation Measure BR-9.1 requires pre-construction surveys for California tiger salamander, the implementation of avoidance measures, and the creation of new breeding habitat, which would be developed in coordination with the USFWS and CDFW. The Applicant would also implement the measures outlined in the California Tiger Salamander Pre-construction Avoidance and Minimization Plan (Bumgardner, 2014). As with the Approved Project, implementation of these mitigation measures would reduce impacts to California tiger salamanders to less than significant levels (Class II).

Impact BR-10: The project could result in the loss of individual blunt-nosed leopard lizards and their habitat (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be reduced in extent. Since 2010, the Project design and construction methodology has been further refined resulting in an overall reduction in permanently disturbed areas and an increase in the mitigation lands. The Revised Project includes an approximately 2,506-acre project area, including 1,888 acres of permanent impacts. The Revised Project avoids the occupied blunt-nosed leopard lizard habitat in the ephemeral reaches of Panoche Creek in the southern portion of the original project footprint, and preserves this habitat via conservation easement within the larger Valley Floor Conservation Area (2,514 acres). See Figure C.6-2 for an overview of special-status species observations (including blunt-nosed leopard lizard) on the Revised Project site and the mitigation lands.

In 2009, LOA surveyed portions of the project site and detected blunt-nosed leopard lizards within an ephemeral reach of Panoche Creek and in grasslands on either side of Panoche Creek. In 2010, LOA conducted protocol-level surveys for both adult and juvenile blunt-nosed leopard lizard on one section of the Project site (640 acres) and also surveyed 135 5-acre plots 5 times within the confines of the CDFW's protocol. The result of those surveys showed that blunt-nosed leopard lizard were more tightly associated with the Panoche Creek drainage and relatively few animals were found in the upland areas associated with the creek. The difference in distribution in 2010 and 2009 could be attributed to the fact that 2010 broke a multi-year drought cycle, and the grasses onsite were much denser than in 2009.

Since 2010, several adult and hatchling blunt-nosed leopard lizard surveys were conducted within the Project footprint and portions of the Valley Floor Conservation Lands (Energy Renewal Partners, 2013, 2014). Survey methodology was based on the following: *Approved Survey Methodology for the Blunt-nosed Leopard Lizard* (CDFG, 2004); a PVS letter "Updated Blunt-nosed Leopard Lizard (BNLL) Survey Methodology" dated May 2, 2013 to California Department of Fish and Wildlife (CDFW); a PVS letter "Supplemental Blunt-nosed Leopard Lizard Study Plan Survey Methodology" dated April 2, 2014 to CDFW; conversations with Mr. Dave Hacker of CDFW and Mr. Patrick Golden of Energy Renewal Partners on June 26, 2013; and email correspondence between CDFW and Duke Energy Renewables on June 27, 2013.

There were 105 blunt-nosed leopard lizard observations during the 2009/2010 surveys seasons, all of which were located within the proposed Valley Floor Conservation Lands and not within the Revised Project footprint (LOA, 2009, 2010). A total of 40 observations of blunt-nosed leopard lizard were

recorded during the 2013 survey season for an overall total of 145 blunt-nosed leopard lizard observations during the two studies. Of those observations, all are within the Valley Floor Conservation Lands. A single individual observed within the Approved Project footprint was found just north of the Valley Conservation Lands boundary that encompassed Las Aguilas Creek. This location and associated buffer area has since been incorporated into the Valley Conservation Lands Boundary (See Figure B-1, Project Location).

A 2014 abbreviated blunt-nosed leopard lizard survey was conducted in accordance with the methodology presented in a letter to the California Department of Wildlife (CDFW) on April 29, 2014. The survey was completed within the central portion of the Project site and included portions of the Valley Floor Conservation Lands where the single individual was observed in 2013 immediately north of Las Aguilas Creek (See Energy Renewal Partners 2014, Survey Area 1, Figure 1). The total acreage covered during the 2014 abbreviated blunt-nosed leopard lizard survey was approximately 600 acres. As described in the Energy Renewal Partners report (2014), no blunt-nosed leopard lizards were found within Survey Area 1 of the Revised Project footprint and Valley Conservation Lands during the 2014 abbreviated survey. However, there were a total of seven reference observations of blunt-nosed leopard lizards, including two in the Valley Conservation Lands and five in the Silver Creek Ranch Conservation Lands to the east of the Project site during the abbreviated surveys. These reference observations were made subsequent to the daily surveys to verify the activity of blunt-nosed leopard lizards in the vicinity.

Implementation of the Approved Project could potentially result in injury and mortality of individual blunt-nosed leopard lizards, habitat loss and modification, and potential changes in the composition and distribution of mammal burrows which provide refuge during extended periods of harsh conditions. The loss and degradation of habitat within the Panoche Valley and the loss of individuals as a result of construction and O&M activities would constitute a significant impact.

However, the re-design of the Revised Project has created large open areas between the solar panel arrays, roadways, and other Project infrastructure, and all locations of blunt-nosed leopard lizards identified through previous surveys are within the 2,514-acre Valley Floor Conservation Lands. While the Revised Project may permanently impact up to 1,888 acres, and have additional indirect impacts within the remaining 618 acres within the Revised Project footprint, the Applicant has committed to acquiring 22,914 acres of mitigation land. As described, these mitigation lands are comprised of approximately 10,782 acres of high value habitat within the Panoche Valley that have slopes less than 11 percent contiguous with the valley floor, and are occupied by blunt-nosed leopard lizard (as well as San Joaquin kit fox and giant kangaroo rat), and are considered likely to contain the same genetically distinct populations of these species that occur on the Revised Project site.

As with the Approved Project, previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition, Previously recommended and adopted Mitigation Measure BR-10.1 would require pre-construction surveys for blunt-nosed leopard lizard and the implementation of avoidance measures. Implementation of these measures would also reduce potential for take of individual blunt-nosed leopard lizards. With

the implementation of these measures, as well as the re-design of the Project as described above, impacts of the Revised Project on blunt-nosed leopard lizard would remain less than significant (Class II).

Impact BR-11: The project will result in loss of habitat for wintering mountain plovers (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR for the Approved Project, but would be somewhat reduced in extent. Since 2010, the USFWS has withdrawn the proposed rule to list the mountain plover as a federally threatened species, determining that the mountain plover is not threatened or endangered throughout all or a significant portion of its range (50 CFR Part 17, May 2011). Following a review of the available scientific information, the USFWS estimates the current mountain plover breeding population to be over 20,000 birds, more than double the estimate cited in the original listing proposal.

However, mountain plovers could still occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to permanent project impacts and an additional 618 acres would be temporarily impacted.

As described in the 2010 Final EIR, due to loss of high quality mountain plover wintering habitat on the Revised Project site, implementation of the Revised Project would be a potentially significant impact. Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring and/or Management Plan is developed and implemented for mitigation lands. An Avian Conservation Strategy has been developed and would be implemented consistent with MM BR-14.2. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. These mitigation measures would reduce impacts to wintering mountain plover habitat to less than significant levels (Class II).

Impact BR-12: The project could result in the loss foraging habitat for golden eagles, California condors, and other special-status raptors (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. The Revised Project site still contains suitable foraging habitat for golden eagles, California condors, and other special-status raptors. See Figure C.6-3 for results of golden eagle surveys in the project area.

Golden eagles, California condors, and other special-status raptors could occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to project impacts and an additional 618 acres would be temporarily impacted.

As described in the 2010 Final EIR, golden eagle aerial surveys were conducted in the non-breeding season by Bloom Biological in early August 2010. Fifteen golden eagle nests were observed within the 10-mile radius of the Project site. Four of the nests showed evidence of having young fledged in 2010. No golden eagle nests occurred within 2 miles of the Project boundary (survey results presented in Appendix 4 of FEIR). LOA reported golden eagles foraging on the site, and there were on average 4-5 golden eagles detected during the past 10 Christmas bird counts (1999-2009) in the Panoche Valley (National Audubon Society, 2010). There are no trees or cliffs suitable for golden eagle nesting on the

Project site, but there are suitable nesting sites within 2 miles, putting the Valley floor well within foraging range. Because this species begins nest building before most other birds, disruption of nest building or the abandonment of existing nest sites could occur if eagles nest within one mile of the project site. This species is sensitive to human encroachment, and if nests are disturbed by humans, nest abandonment will typically occur (Thelander, 1974).

Since 2010, and in coordination with the USFWS Ventura office, Energy Renewal Partners conducted a Phase II site-specific golden eagle study documenting golden eagle occurrence, frequency, and behavior during the migratory and wintering phase (September 2013 through January 2014) within the Revised Project site associated conservation lands (Energy Renewal Partners, 2014). In addition aerial surveys conducted in January and March 2014 were completed to determine the number and locations of occupied nests and the approximate centers of occupied nesting territories of GOEA within a 10-mile radius centered on the Revised Project footprint (Bloom, 2014). The 2013/2014 the point count surveys resulted in 15 golden eagle observations within the project site or within the adjacent Valley Conservation Area. Of these observations, approximately 47% were seen during a single survey event (September 17-19, 2013), where 7 golden eagles were observed feeding on a carcass of a dead animal within the Revised Project boundaries. With exception of the golden eagles observed feeding on a carcass within the Revised Project site, the study (Energy Renewal Partners, 2014) concluded that there was a greater use by golden eagle in the hills in the Valadeao Ranch Conservation Area than within the Revised Project or Valley Floor Conservation Area.

The golden eagle aerial nest surveys conducted by Bloom Biological within ten miles of the Revised Project in January and April 2014, resulted in the documentation of 46 golden eagle nests and an estimated 30 golden eagle territories, with nine of them active. None were located within three miles of the Revised Project site; however, four nests comprising four breeding territories were located within four miles of the Revised Project boundary. Two of these four nests were active in 2014, though neither nest was ever found to contain eggs or nestlings. The next closest active Golden Eagle nest to the Project in 2014 was located 5.79 miles north-northwest of the Revised Project boundary (Bloom, 2014).

As described in the 2010 Final EIR, due to the presence of golden eagle foraging habitat on the Revised Project site, the loss of occupied golden eagle foraging habitat would constitute a significant impact for this species. Impacts to foraging habitat for California condors, Swainson's hawk, and white-tailed kite would also be potentially significant absent mitigation; however, these raptors have not been observed on site during the approximately 25,000 survey hours logged.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented (including daily collection of trash and microtrash); (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition, Previously recommended and adopted Mitigation Measure BR-6.1 would require pre-construction surveys for all nesting and breeding birds and previously recommended and adopted Mitigation Measure BR-12.2 would require avoidance and reporting of California condors that land on the project site. These mitigation measures would reduce impacts to less than significant levels (Class II). In addition to these measures, the Applicant has prepared an Eagle Conservation Plan and an Avian Conservation

Strategy that contain management and monitoring measures for the species (as set forth in MM BR-14.2). These plans are subject to approval from the USFWS and CDFW.

Impact BR-13: The project could result in the loss of burrowing owl, loss of foraging habitat for burrowing owl and loss of occupied burrowing owl habitat (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. Burrowing owl could occur in all areas of the Revised Project site directly and indirectly affected by the construction of the solar arrays, buildings, substation, and other infrastructure or activities. Up to 1,888 acres of potential habitat would be permanently lost due to permanent project impacts and an additional 618 acres would be temporarily impacted.

The loss of occupied burrowing owl habitat, and the loss of individuals (including eggs or young) as a result of construction, or O&M activities along the project perimeter, would remain a potentially significant impact under the Revised Project. However, previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition previously recommended and adopted Mitigation Measure BR-13.1 would require pre-construction burrowing owl surveys and implementation of avoidance measures and previously recommended and adopted MM BR-14.2 would require that an Avian Conservation Strategy is developed and implemented. These mitigation measures would reduce impacts to burrowing owls to less than significant levels (Class II).

Impact BR-14: The project could result in electrocution <u>with overhead wires</u> or collision with overhead wires <u>or solar panels</u> by State and/or federally protected birds (Class II)

The risks associated with electrocution or collision with overhead wires by State and/or federally protected birds remains the same as described in the 2010 Final EIR.

The Revised Project would require a 230 kV line supported by twelve 2-foot diameter TSPs to convey electricity from the substation to the existing PG&E line. In addition, there would also be a series of medium voltage 34.5 kV lines that convey electricity from the solar arrays to the substation. Numerous species of birds occur on the site and fly over the site, and may be affected by the electrical transmission lines, generation tie lines, guide wires, and towers.

Because the Revised Project would involve new high and medium voltage electrical lines, it could result in increased mortality of state and/or federally protected bird species through electrocution and collision with wires, which would constitute a significant impact. However, it is difficult to predict the magnitude of collision-caused bird mortality as a result of the Revised Project. Based on the known distribution of the species in the project area and observations made during previous surveys, it is generally expected that collision mortality would occur. As collisions have been documented at photovoltaic facilities in California (HTH, 2013b), the construction of Revised Project would result in net increase of collisions compared to baseline conditions.

Previously recommended and adopted Mitigation Measure BR-14.1 would require implementing the APLIC guidelines, which would reduce impacts to birds by reducing or minimizing collision and electrical risk.

The required Avian Conservation Strategy (previously recommended and adopted Mitigation Measure BR-14.2) would require the Applicant to conduct avian mortality studies on the Project site. This would include the proposed solar arrays and the small distribution and feeder lines. The study would document the level of bird mortality and if the County and regulatory agencies deemed the mortality excessive, would require the Applicant to take corrective actions (i.e. adaptive management) including the placement of additional bird flight diverters, alterations to project components that have been identified as key mortality features (i.e., the modification of project colors or coatings), or other appropriate actions approved by the County and regulatory agencies. Other measures including the collection and removal of trash would reduce potential attractants for various birds. In addition, the Revised Project would be subject to the management requirements outlined in previously recommended and adopted Mitigation Measure BR-G.6 (Develop and implement a Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan for mitigation lands), and previously recommended and adopted 23.1 (Create conservation easement on all project areas retired from the development footprint). With the implementation of these mitigation measures, electrocution and collision-related impacts to protected birds would be less than significant level (Class II).

Impact BR-15: The project could result in mortality of, and loss of habitat for, special-status bat species (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. As described in the 2010 Final EIR, the following five special-status bat species potentially occur on the Revised Project site as suitable habitat exists and the site is within the range of these species: Western red bat (*Lasiurus blossevillii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and Hoary Bat (*Lasiurus cinereus*). Project development has the potential to impact special-status bat species through loss of foraging and sub-optimal roosting habitat, and disturbance. Impacts would vary dependent on species specific differences in foraging and seasonal distributions, which are described below:

Western Red Bat, Federal Status: None; State Status: Species of Special Concern. The western red bat has been detected within 10 miles of the Revised Project site (CNDDB, 2014); however, the Revised Project site does not support many trees and does not have the intact cottonwood/sycamore valley riparian habitat preferred by the species. The species may occur in the Panoche Valley along the riparian corridor, approximately 2.5 miles south of the Revised Project site, and the Revised Project site is potentially foraging habitat for this species.

Pallid Bat. Federal Status: None; State Status: Species of Special Concern. The pallid bat has been detected within 10 miles of the Revised Project site (CNDDB, 2014), and the entire site provides suitable foraging habitat for the species. Trees and other structures near residences provide suitable day roosting habitat. If this species roosts adjacent to the site, it is highly likely that the pallid bat may forage on the site year-round.

Western Mastiff Bat. Federal listing status: Federal Species of Concern; State listing status: Species of Special Concern. Western mastiff bats have been detected within 10 miles of the Revised Project site and the entire Revised Project site supports suitable foraging habitat for this species. Potential roost sites (e.g., tall buildings) are generally lacking on-site; however, this species may take temporary refuge in shorter structures or trees. If roosting habitat is present adjacent to the Revised Project site, there is a high potential that this species may forage within site on a year-round basis.

Townsend's big-eared bat (*Corynorhinus townsendii*). Federal listing status: none; State listing status: Species of Special Concern, State Threatened Candidate. The Townsend's big-eared bat has not been reported within 10 miles of the Revised Project site (CNDDB, 2014); however, the site occurs within the range of the species. Regular occurrence on the site is unlikely due to lack of known nearby maternity colonies, although foraging individuals may visit the site on rare occasion.

Hoary Bat (*Lasiurus cinereus*)**.** Federal Status: None; State Status: Species of Special Concern. There are no CNDDB (2014) records of occurrences of the hoary bat within 10 miles of the Revised project site; however, the site comprises suitable foraging habitat and trees on and near the site can be used for cover. The species likely occurs on the site, at least intermittently throughout the year.

As discussed in the 2010 Final EIR, potential direct effects on special-status bat species resulting from the Project are as follows:

- The entire 2,506-acre Revised Project site contains suitable foraging habitat for the bat species discussed above, and permanent alteration to bat foraging habitat would occur as a result of the conversion of Annual Grassland habitat to a developed solar farm.
- The Revised Project site may contain suitable roosting habitat within structures on the property, and possibly within trees. For pallid bats that may potentially roost in abandoned buildings within portions of the project site to be developed, disturbance of individuals roosting in these buildings could occur due to nearby construction noise, or destruction of the abandoned building(s).
- Bats foraging over the project area may collide with solar arrays and supporting structures, support cables, and medium voltage transmission lines, resulting in injury or mortality (see Crawford and Baker, 1981).

Potential indirect effects on special-status bat species resulting from the development of the proposed project may include the following:

- Some bat species may use the solar array structures as daytime roost sites. However, during the warmer months, the array structures may heat up to temperatures intolerable to bats and become a potential mortality factor.
- Bats that forage near the ground, such as the pallid bat, could be subject to crushing or disturbance by vehicles driving at dusk, dawn, or during the night. The construction and use of access roads could also disturb bats.
- When foraging over solar array panels, the uniform flat surfaces may influence the echolocation abilities of bats, potentially decreasing the suitability of the project site as a foraging area, or cause disorientation, especially for those species that forage close to the ground.

Project development has the potential to impact individual special-status bats through loss of foraging and sub-optimal roosting habitat, and disturbance. Given the scale of the project footprint relative to the size of the Panoche Valley these impacts would be potentially significant if roosting or maternity colonies are affected; ample suitable foraging habitat for these bat species exists regionally.

Since 2010, bat monitoring studies have been initiated at several solar sites, providing additional data related to use during the construction and operation of solar facilities. Data from CVSR (HTH, 2013c) suggest that pallid bats foraged less frequently in energized solar arrays, but there was actually no significant difference in the amount of time pallid bats spent in conservation lands (lacking arrays) versus the energized arrays. Based on professional opinion, pallid bats may take a while to overcome (learn how to negotiate) the chain-link fence surrounding each array, and foraging may initially decline.

Additionally, ground disturbance associated with the array construction may initially decrease populations of potential prey. However, it is expected that pallid bat foraging behavior is flexible enough (as suggested in Johnston and Fenton [2001]) to allow bats to learn to overcome the fence (if that is initially a barrier). Furthermore, microclimate effects (e.g., variations in light, temperature, and moisture) on vegetation, and potential shifts in plant species composition within the solar arrays, would likely ultimately increase the relative abundance and availability of prey for pallid bats.

Furthermore, available foraging habitat for this species on, and in the adjacent areas, of the Revised Project site is not likely a limiting factor contributing to their regional population status. Rather, the conservation of this species is more likely dependent upon the availability and maintenance of roosting habitat that remains intact and without anthropogenic disturbances as suggested for most bat species as suggested by Fenton (1997).

Bats foraging over the Revised Project site could collide with stationary objects (Crawford and Baker, 1981) such as solar panels, cables, and transmission lines. Also, Orbach and Fenton (2010) found that artificial night light can play a role in bat collisions. However, at CVSR, data from extensive surveys designed to detect injured or dead bats associated with features within large solar arrays have not detected bat fatalities or injuries to date (HTH, 2013b).

One potential risk for bats is the possibility that they may mistake solar panels for water, attempt to drink from them, and become exhausted or collide with the panels. This risk is still being studied and debated among biologists. Greif and Siemers (2010) reported that, in a laboratory situation, 15 species of naïve juvenile bats attempted to drink from smooth, anthropogenic surfaces such as metal, wood, and plastic, which mimic the acoustic characteristics of water. Bats in this study were unable to learn that the smooth artificial surfaces were not water, and continued to respond repeatedly to the false acoustic cue, stimulating them to make more than a hundred passes in some cases. This laboratory study raised concerns that bats, especially young naïve individuals, may try to drink from any smooth, horizontal surface (including solar panels at 0°), and may do so to the point of exhaustion and death.

Site-specific data from CVSR and new research in this area of bat behavior suggest that stowing solar panels at 0° would not pose a significant risk to bats in the wild, as was previously postulated, as long as panels are not immediately adjacent to maternity colonies. No bat fatalities have been detected during fatality monitoring at two arrays, totaling 180 tracker blocks, with all panels stowed in the horizontal position at night (HTH, 2013b). Moreover, recently conducted experiments (S. Greif, 2013) suggest that flat-surfaced panels positioned at steep angles (e.g., 40° or more) are frequently perceived as a void that bats attempt to fly through, resulting in collisions. Based on these results, storing solar panels at 40° may increase potential risks to bats relative to storing them at 0°.

In another recent paper, Russo et al. (2012) suggested that experienced bats show enough behavioral flexibility to quickly leave a human-made horizontal surface after determining that the surface is not water. Only young bats that have recently learned to fly are likely to mistake panels stored at 0° for water, and probably only within their first few weeks (or perhaps only their first few days) of flying. Any potential effect, therefore, would be limited to a short period during midsummer, when young bats first begin to fly. Because bats (particularly pallid bats) typically roost relatively close to a drinking source (HTH, 2006), and the arrays are not located near permanent sources of surface water, these young bats are unlikely to occur at the arrays until after they have experience drinking from locations closer to their maternity colonies.

Previously recommended and adopted Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best

Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan and/or a Habitat Management Plan is developed and implemented for mitigation lands. Previously recommended and adopted Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. These measures would minimize impacts to the vegetation and aquatic features on the site that support invertebrate prey. Implementation of previously recommended and adopted Mitigation Measures BR-15.1 through 15.3 would require pre-construction surveys and avoidance measures. Implementation of these mitigation measures would ensure that roosting and breeding bats are not displaced, injured, or killed. Implementation of these mitigation measures would reduce impacts to special-status bat species to less than significant levels (Class II).

Impact BR-16: The project could result in the loss of giant kangaroo rat, loss of foraging habitat, and loss of occupied habitat (Class II)

This impact was described in the 2010 Final EIR and would be somewhat reduced for the Revised Project. See Figure C.6-4 for mapped locations of giant kangaroo rat precincts on the Revised Project site.

Revised Project Design. Since 2010, the Project design and construction methodology has been further refined resulting in an overall reduction in permanently disturbed areas and an increase in the mitigation lands. The Revised Project includes an approximately 2,506-acre project area, of which permanent impacts would occur within 1,888 acres, which is 415 acres less than the impacts described in the 2010 Final EIR for the Approved Project. The Revised Project was adjusted to avoid areas of highest giant kangaroo rat occupancy that were identified during surveys conducted in 2013 (Energy Renewable Partners, 2013). These areas of high occupancy would be preserved in perpetuity via conservation easement as part of the Valley Floor Conservation land (2,514 acres as opposed to 2,072 acres for the Approved Project) and are no longer included in the project footprint.

Revised Project Site. McCormick Biological, Inc. and Energy Renewal Partners conducted full coverage surveys of the Revised Project site, surrounding 500-foot buffer, and proposed Conservation Lands in February and March of 2013 with follow-up surveys conducted in July 2013 to evaluate cells that were recorded as inactive during the initial survey subsequent to giant kangaroo rat reproduction (Energy Renewal Partners, 2013). Field surveys used a grid sampling system where 30-by-30-meter grid squares were searched for evidence of giant kangaroo rats. Grid squares were arranged along north-south running parallel transects. Surveyors visually inspected each grid square for evidence of giant kangaroo rat burrow precincts. Burrow precincts were considered occupied based on presence of scat, tracks, tail-drags, pit caches, fresh excavations, and cropped vegetation around a series of suitably sized horizontal and vertical burrow openings. Precincts that did not appear to be occupied were also identified and mapped as inactive. Precincts were considered unoccupied when characteristic horizontal and vertical burrow openings and the surrounding area were devoid of all sign (fresh scat, tracks, fresh digging, and cropped vegetation) (Energy Renewal Partners 2013).

Of the 16,775 total grid cells(approximately 3,731 acres), located within the Revised Project footprint and the 500-foot buffer study area, approximately 13,825 survey grid cells (3,075 acres) were evaluated including 11,858 (2,637 acres) within the project footprint and 1,967 grid cells (437 acres) within the 500-foot buffer extending out from the Revised Project. A total of 296 of these grid cells (66 acres) were determined to be active at the time of the survey including 197 cells (44 acres) within the Project footprint along with 99 active grid cells (22 acres) within the 500-foot buffer. The remaining 2,950 grid cells (656 acres) were not evaluated primarily due to access issues (landowner permission and unsafe

conditions such as steep terrain, presence of bulls, etc.). The inaccessible grid cells that were not evaluated are located outside the project footprint within the 500 foot buffer survey area. Areas where data was not collected are located along fenceline locations along the 500-foot buffer and VFCL. None are wholly within the project footprint.

Energy Renewal Partners (2013) assumed at least one giant kangaroo rat per 30-by-30-meter grid square that exhibited any giant kangaroo rat activity and concluded that at the time of the survey there were a minimum of 197 giant kangaroo rats present within the Revised Project footprint. The results of the 100 percent survey were used to generate estimates of the total number of giant kangaroo rats potentially supported in the Revised Project footprint. It was conservatively assumed that all 197 active cells were located in high quality giant kangaroo rat habitat even though habitat quality in the project footprint appears to be compromised over much of the occupied area due to past land use practices. An attempt was made to field verify the density of giant kangaroo rats per active cell; however, based on field conditions (heavy grazing), it was not possible to identify individually clipped precincts within the grid cells. Without performing systematic grid trapping study, it is assumed that each active cell within the project footprint is occupied with at least one individual giant kangaroo rat. In addition, each 30 meter by 30 meter cell was assumed occupied regardless of how much activity was present; therefore, a single burrow present in the corner of a grid cell that was actually part of a precinct in the adjacent cell was counted in both locations. This resulting assumed minimum density is consistent with some of the lower densities recorded in the region by some research (Williams et al. 1992) and above the density predicted by the Habitat Suitability Model (HSM) for the project.

Using this density estimate for giant kangaroo rat within the project footprint, a minimum of 197 giant kangaroo rats were are expected to occur within the project footprint at the time of the survey. Typically giant kangaroo rat populations can fluctuate significantly from year to year and within years, potentially leading to a population increase across the project footprint outside of the cells identified as active during the survey. A population increase would likely result in occupancy of at least the currently inactive giant kangaroo rat cells found within the Revised Project footprint. Therefore, a minimum reasonably expected estimate of the population potentially supported within the project footprint is 285 individual giant kangaroo rats. Based on the field surveys, the HSM, and previously published studies (Williams et al. 1991,1992, 1995; Cooper and Randall 2007), the Applicant estimated 197-506 giant kangaroo rats could be expected to inhabit the approximately 63 acres of occupied habitat that would impacted by the Revised Project. During periodic population increases, giant kangaroo rats may reproduce in large numbers, making it problematic to predict the upper limit of such a population; however, these conditions would not be considered typical.

Cooper and Randall (2007) determined the non-breeding home range of male and female giant kangaroo rats to be 0.05 acres suggesting the density of giant kangaroo rats that could be present within a 30-by-30 meter area could be 4-5 times higher than the minimum that was assumed by Energy Renewal Partners (2013).

Energy Renewal Partners (2013) noted that giant kangaroo rat populations can fluctuate substantially and postulated that the first areas to be occupied on the project footprint would be the cells that were noted as inactive. Therefore, if all inactive cells were occupied, a minimum of 285 giant kangaroo rats may be present on the site. Energy Renewal Partners (2013) provided an additional estimate of the onsite population based on estimated giant kangaroo rat density of 7.9 individuals/acre found on the nearby Valadeao Ranch (Williams et al. 1995), which suggests there may be more than 500 giant kangaroo rats within the Revised Project footprint. This is consistent with empirical data collected in 2009 and 2010.

The initial assumption of one giant kangaroo rat per 30 x 30 m grid square would mean approximately 11 giant kangaroo rats/hectare or an average of 4.5 giant kangaroo rats/acre which is a relatively low density. Williams et al. (1992) reported that densities as low as 0.82 giant kangaroo rats/acre and as high as 21.04 giant kangaroo rats/acre had been recorded in the Panoche region. Williams and Kilburn (1991) reported densities of 18 to 69 burrows/hectare, equivalent to an average density of 7.3 to 27.9 giant kangaroo rats/acre. Braun (1985) reported an estimated average density of 25 giant kangaroo rats/hectare, or approximately 10.1 giant kangaroo rat/acre and noted the colony studied was not in prime habitat. Although no density estimates are available for the Valley Floor Conservation Lands, the density estimate of 7.9 giant kangaroo rats/acre reported for the Valadeao Ranch by Williams et al. was measured in similar habitat to the Project Footprint. Using this estimate would indicate approximately 350 giant kangaroo rats may occur within the areas identified as currently occupied by active giant kangaroo on the Revised Project.

Differentiating between inactive and active giant kangaroo rat precincts can be confounded by extended periods of inactivity. For example, on two occasions giant kangaroo rats relocated at the California Valley Solar Ranch showed no sign of activity on the surface for 42 and 46 days respectively, and both individuals were later confirmed present at the artificial burrows where they were released when PIT-tag identification numbers were recorded (HTH, 2013d).

Although inactive burrows are common place among active colonies, a number of the burrows considered inactive may in fact have been active, with the animals remaining underground for extended periods. Assuming a density of 7.9 giant kangaroo rats/acre, within the 20 acres where giant kangaroo rat precincts were determined to be inactive there could be as many an additional 158 giant kangaroo rat precincts within the Project footprint. Since some of the apparently inactive precincts may actually be active, the number of giant kangaroo rats occurring within the Revised Project footprint may range from 350 to over 500.

Mitigation Lands

Similar giant kangaroo rat surveys were conducted throughout the Valley Floor Conservation Lands, Valadeao Ranch Conservation Lands, and the Silver Creek Ranch Conservation Lands. Of the 11,190 total survey grid cells (2,489 acres) located within the Valley Floor Conservation Land study area, approximately 10,001 survey grid cells (2,224 acres) were surveyed. A total of 896 of these grid cells (199 acres) were determined to be active at the time of the survey. The remaining 1,189 grid cells (264 acres) were not surveyed due to lack of access because to livestock operations or other restrictions. The unsurveyed grid cells are located primarily along the southern buffer area of the Valley Floor Conservation Lands.

Of the 10,309 total survey grid cells (2,293 acres) located within the Silver Creek Ranch Conservation Lands study area, approximately 8,211 survey grid cells (1,826 acres) were surveyed. A total of 1,883 of these grid cells (419 acres) were determined to be active at the time of the survey (23% of the cells evaluated). A total of 2,098 grid cells (467 acres) were not surveyed due to lack of landowner access, excessively steep terrain, or other reasons precluding surveyors from entering the grid cells (Energy Renewal Partners, 2013). The unsurveyed grid cells are primarily located along the southern boundary of Silver Creek Ranch and within the wetted channel of Panoche Creek.

Of the 10,166 total survey grid cells (2,261 acres) located within the Valadeao Ranch Conservation Lands study area, approximately 6,973 survey grid cells (1,551 acres) were surveyed. A total of 58 of these grid cells (13 acres) were determined to be active at the time of the survey (1% of the cells evaluated) while 48 grid cells (11 acres) were inactive. A total of 3,193 grid cells (710 acres) were not surveyed due to lack

of landowner access, excessively steep terrain, or other reasons precluding surveyors from entering the grid cells. The unsurveyed grid cells are primarily located in steep terrain along the west, north, and east boundary of the Valadeao Ranch Conservation Lands, as well as steep terrain located just northeast of the Project Footprint along the southern boundary of Silver Creek Ranch.

Survey results for the Valley Floor and Silver Creek Conservation Lands indicate much higher absolute numbers of giant kangaroo rats, relative to the Revised Project site. For example within the Valley Floor Conservation Lands that were surveyed there were 199 acres where active giant kangaroo rat precincts were identified, along with 165 acres where giant kangaroo rat precincts were located but determined inactive. Based on an average density of 7.9 giant kangaroo rats per acre, the population within the Valley Floor Conservation Lands could range from approximately 1,572 to over 2,800 giant kangaroo rats. Likewise, surveys of the Silver Creek Ranch Conservation Lands revealed an area of approximately 419 acres where active giant kangaroo rat precincts were identified along with 314 acres where giant kangaroo rats were found but determined to be inactive in the surveyed grid cells. Giant kangaroo rat densities on the Silver Creek Ranch likely exceed densities of 7.9 precincts/acre; nonetheless, at an average density of 7.9 giant kangaroo rats/acre the population within the Silver Creek Conservation Lands likely exceeds 3,300 to 5,700 giant kangaroo rats, given that the surveyed grid cells represent a sample of less than 20% of the Silver Creek Conservation Lands. Valadeao Ranch Conservation Lands support a much lower absolute number of giant kangaroo rats. Applying the same density, the population would range from 102 to 190 giant kangaroo rats on the portion of the lands surveyed, which was slightly more than 20% of the site.

As with the Approved Project, the Revised Project would result in the permanent alteration of suitable and occupied giant kangaroo rat habitat and the displacement of an undetermined, but potentially very large, number of individuals. The initial estimates of the onsite population do indicate a relatively large population of giant kangaroo rats may be present within the Revised Project footprint; however, the Applicant has prepared a Giant Kangaroo Rat Relocation Plan for those animals occurring within the project footprint (Energy Renewal Partners and McCormick Biological, Inc. 2013). The plan outlines strategies for relocating giant kangaroo rats from Project impact areas to artificial burrows to be located in portions of Project Conservation Lands currently unoccupied by giant kangaroo rats.

At the California Valley Solar Ranch site, 221 giant kangaroo rats were successfully relocated to artificial burrows and of those approximately 94% appear to have persisted at their respective release site for more than 50 days, with 87% apparently persisting at the release location for more than 100 days (HTH 2013d). This is a very high level of apparent survival of relocated kangaroo rats. Germano et al. (2013) report that approximately 58% of Tipton kangaroo rats placed in artificial burrows enclosed with wire mesh cages (approximately 60 x 90 cm) survived for a minimum of 30 days, compared to approximately 38% survival beyond 30 days of animals released without restrictive cages. Shier and Swaisgood (2012) used small “acclimation cages” that prevented relocated Stephen’s kangaroo rats (*Dipodomys stephensi*) from leaving the artificial burrow, but removed them after one week, and reported a survival of 62.5% of translocated females and less than 50% for translocated males.

H. T. Harvey & Associates (HTH 2013d) attributed the success of the relocation at the California Valley Solar Ranch to the extended use of enclosures constructed around artificial burrows. Behavioral evidence indicated that giant kangaroo rats immediately attempted to excavate the enclosure following release and those that were initially unable to do so remained at the release sites, excavated new burrow systems from the artificial burrows. Although these individuals eventually left the enclosure, they tended to remain near the release sites (HTH 2013d).

The Energy Renewal Partners and McCormick Biological, Inc. (2013) Giant Kangaroo Rat Relocation Plan specifies the use of artificial burrows and enclosures that would remove the enclosures following a 10-day acclimation period. Reports of kangaroo rat relocation efforts where burrow enclosures where removed after a short period, indicate a far lower apparent survival rate for relocated animals (Shier and Swaisgood 2012; Germano et al. 2013) relative to what was reported California Valley Solar Ranch site (HTH 2013d).

The re-design of the Revised Project has created relatively large open areas between the solar panel arrays, roadways, and other Project infrastructure. Although a large number of giant kangaroo rat precincts would be located within the solar arrays and in areas where roadways or other Project infrastructure would be constructed, other giant kangaroo rat precincts would be avoided and remain in place. During construction of the California Ranch Solar Ranch facility, 229 giant kangaroo rat precincts, which occurred in or near impact areas, were avoided by altering construction methods and access, or by implementing minor Project re-design (HTH, 2013d).

While the Revised Project may permanently impact up to 1,888 acres, and have additional indirect impacts within the remaining 618 acres within the Revised Project footprint, the Applicant has acquired rights to 22,914 acres of mitigation land. As described, these mitigation lands are comprised of approximately 10,782 acres of high value habitat within the Panoche Valley that have slopes less than 11 percent and are contiguous with the Valley floor. The mitigation lands are occupied by giant kangaroo rat (as well as San Joaquin kit fox and blunt-nosed leopard lizard), and are considered likely to contain the same genetically distinct populations of these species that occur on the Revised Project site.

Although the precise number of giant kangaroo rats that would be impacted by the construction of the Project has not yet been determined (see Energy Renewal Partners and McCormick Biological, Inc. 2013), the Revised Project would be expected to impact fewer giant kangaroo rats than would have been impacted under the original 2010 Project design and the Approved Project. The project footprint was adjusted to avoid areas of highest occupancy that were identified during the 2013 survey. These areas of high occupancy would be preserved in perpetuity as part of the Valley Floor Conservation land and are no longer included in the project footprint. Implementation of Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Management Plan is developed and implemented for mitigation lands. MM BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and MM BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. Mitigation Measure BR-16.1 requires pre-construction surveys and avoidance measures. Mitigation Measure BR-16.2 requires use of foundation installation equipment that would minimize noise and vibration. Mitigation Measure BR-16-3 requires the preservation, management, and maintenance of functional giant kangaroo rat habitat corridors, which would ensure habitat connectivity believed to be critical to the survival of this species in the Panoche Valley.

These mitigation measures would greatly reduce potential for take of individual giant kangaroo rats and provide for critical connectivity between Panoche Valley habitat for this species. With permanent protection of the currently identified mitigation lands and populations of giant kangaroo rats within the mitigation lands, along with the implementation of avoidance and mitigation measures and the

implementation of an approved giant kangaroo rat relocation program, impacts of the Revised Project on giant kangaroo rat would remain less than significant (Class II).

Impact BR-17: The project could result in the loss of San Joaquin antelope squirrel, loss of foraging habitat, and loss of occupied habitat (Class II)

This impact was described in the 2010 Final EIR and would be somewhat reduced. As described in the 2010 Final EIR, antelope squirrels have been observed on the Revised Project site east of Little Panoche Road. Antelope squirrels were also observed to the east of site (less than 1 mile from the easternmost edge of the site) and regularly along Panoche Road (LOA, 2009). There are 21 CNDDB (2014) records of antelope squirrels within dispersal range of the Revised Project site, dating from the 1930s to 2006, with one CNDDB (2014) record of San Joaquin antelope squirrel on-the project site. It appears that current occupation of the Revised Project site by San Joaquin antelope squirrels is limited, as this species is typically readily detectable. As they do occur on the project site and can move considerable distances during dispersal, impacts are anticipated as a result of project development. See Figure C.6-5 for results of San Joaquin antelope squirrel surveys in the project area.

The Applicant's biological resources consultant, McCormick Biological, prepared an Antelope Squirrel Relocation Plan (McCormick, 2014), which summarizes additional antelope squirrel survey data collected since 2010. As described in the Antelope Squirrel Relocation Plan, surveys performed between 2009 and 2012 (total of over 20,000 survey hours) within the Revised Project and Mitigation Lands have documented the presence of antelope squirrel in multiple locations. During these surveys, antelope squirrels were regularly observed in the more diverse habitats on the Valadeao Ranch Conservation Lands and Silver Creek Ranch Conservation Lands during surveys conducted in 2009, 2010, and 2012 by Live Oak Associates, Inc., with over 234 observations (Energy Renewal Partners and McCormick, 2014). During these surveys, relatively fewer individuals were observed on the Revised Project site (3 in 2009) and the Valley Floor Conservation Lands (2 in 2010). During the blunt nosed leopard lizard protocol surveys between June and September 2013, antelope squirrels observations were recorded as follows: Revised Project Footprint (30); Valley Floor Conservation Lands (5); and Valadeao Ranch Conservation Lands (14).

The Revised Project could degrade up to 1,888 acres of San Joaquin antelope squirrel habitat and have additional indirect impacts within the remaining 618 acres of the Revised Project footprint. Due to the small population sizes and relatively restricted range of the San Joaquin antelope squirrel, any injury or mortality of individual San Joaquin antelope squirrels, impedance to dispersal, or degradation of habitat as a result of the Revised Project would be a potentially significant impact.

Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan is developed and implemented for mitigation lands. Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. Mitigation Measure BR-17.1 would require pre-construction surveys for San Joaquin antelope squirrel and the implementation of avoidance measures. These mitigation measures would reduce impacts to San Joaquin antelope squirrel to less than significant levels (Class II).

Impact BR-18: The project could result in mortality of, and loss of habitat for American badgers (Class II)

This impact was described in the 2010 Final EIR and would be somewhat reduced based on the reduced footprint and permanent impacts of the Revised Project..

The Panoche Valley contains large areas of suitable habitat for the American badger, a California Species of Special Concern, and badgers are known to occur within the Revised Project site. Given the quality of habitat on the project site, the number of observations, and known badger ecology, several males and multiple females likely occur within the Revised Project site. All areas directly affected by the construction of the project and support facilities comprise American badger habitat (1,888 acres). Development of the Revised Project could result in injury and mortality of individual American badgers, and would result in habitat loss, substantial habitat modifications, and potential changes in the composition and distribution of small mammal species on which American badgers prey upon. The loss of habitat and the potential loss of individuals as a result of construction and O&M activities would be a potentially significant impact to American badgers.

However, Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan is developed and implemented for mitigation lands. Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition, Mitigation Measure BR-18.1 would require pre-construction surveys for American badger and implementation of avoidance measures. The implementation of these mitigation measures would reduce impacts to American badgers to less than significant levels (Class II).

Impact BR-19: The project could result in the loss of San Joaquin kit fox, loss of foraging habitat, and loss of occupied habitat (Class II)

This impact was described in the 2010 Final EIR and would be somewhat reduced. As described in the 2010 Final EIR, the entire Revised Project site is suitable home range and dispersal habitat for San Joaquin kit fox. San Joaquin kit fox have been consistently observed throughout the Panoche Valley region with 16 observations reported to the CNDDB (2014) between 1975 and 2006. Based on observations made during nighttime spotlight surveys and locations of radio collared kit foxes, Williams et al. (1996) estimated that 6 adults occupied the McCullough Ranch, which is located immediately southwest of the Revised Project site. More recently, 8 kit foxes were observed during spotlight surveys and 6 kit foxes were recorded on camera in the Panoche Valley (Constable et al., 2009). Westphal (2010) identified 17 individual kit foxes from genetic material recovered from kit fox scat collected throughout the Panoche Valley. See Figure C.6-6 for recent San Joaquin kit fox survey results.

LOA conducted surveys for San Joaquin kit fox in 2009 and found abundant evidence of their presence on the Project site, including at least 2 natal dens and approximately 30 potential dens. Kit fox were observed during surveys for blunt-nosed leopard lizards, as were other sign including tracks and scat. During reconnaissance surveys in 2010, HTH biologists encountered widespread sign of kit fox, including tracks, scat, and dens; and observed and photographed a kit fox active at midday on April 6, 2010. In 2010, LOA found evidence of active and inactive San Joaquin kit fox dens at 10 of 135 5-acre sample

plots, and scats and latrines were observed throughout the site during rare plant surveys and while walking between sample plots.

Revised Project Design. Since 2010, the Project design and construction methodology has been further refined resulting in an overall reduction in permanently disturbed areas and an increase in the mitigation lands. The Revised Project includes an approximately 2,506-acre project area, of which permanent impacts would occur within 1,888 acres. The Revised Project includes a 500 meter wide San Joaquin kit fox corridor that runs north to south through the center of the project. This protected corridor serves to preserve connectivity for the San Joaquin kit fox from the Valley Floor Conservation Lands to the Valadeao Ranch Conservation Lands and other open lands to the north and west of the project footprint. The Revised Project avoids the highest density occupied San Joaquin kit fox habitat in the southeast portion of the original project footprint, and preserves this habitat and corridor via conservation easement within the Valley Floor Conservation Area (2,514 acres).

Additional Information regarding San Joaquin kit fox. Since 2010, monitoring data from several solar sites has become available, providing additional information related to kit fox use during the construction and operation of solar facilities. Two years of observations of San Joaquin kit fox at the California Valley Solar Ranch (CVSR) during construction reveal considerable tolerance or even indifference by kit fox to many types of construction activities. At the CVSR site, kit foxes have, on numerous occasions, relocated older pups to secondary dens located relatively close to active traffic and construction zones. In 2012, there were 554 sightings of San Joaquin kit fox within the CVSR construction area during daily biological construction monitoring activities (HTH, 2013e). Likewise at that site, kit fox have frequently excavated and occupied dens under and adjacent to solar panels, often well inside the arrays (HTH, 2013e). At the CVSR site, 56 kit fox dens were identified, monitored, and found to be active at some point during 2012, and 17 of these dens were used by four family groups as natal dens at some time during the 2012 breeding season (HTH, 2013e). Between January and June 2013, 17 dens were found to be active within the CVSR Project site, with four being classified as natal, but no pups were detected at the dens during the breeding season (HTH, 2013f). Up to four kit fox pups, however, were observed on private land close enough to construction activities that protective buffers overlapped the construction access roads. Although these data are limited to one project in different biological conditions than the Revised Project, they support HTH biologists' professional judgment that San Joaquin kit fox present on the site would be tolerant of most construction and operational activities, but that some dens could still be vulnerable to destruction or disturbance.

Development of the Panoche Valley Solar Farm could result in injury and mortality of individual San Joaquin kit fox, and would result in loss and degradation of habitat. The loss and degradation of habitat and the direct loss of individuals as a result of construction and O&M activities would constitute a significant impact to San Joaquin kit fox.

Furthermore, as described in Section C. 14 (Traffic and Circulation), the estimated workforce traveling to/from the site daily has increased from 250/30 peak daily round trips (employees/deliveries) to 475/100 under the Revised Project. As discussed in the 2010 Final EIR, all truck traffic and deliveries, along with approximately 40% of personal vehicle traffic would enter the site from the north on Little Panoche Road. In order to accommodate increased daily traffic volume associated with the Revised Project, and decrease safety risks to personal traffic, and avoid some San Joaquin kit fox habitat, the Revised Project proposes to allow all remaining personal vehicle traffic to enter the site from the west on Panoche Road. Consistent with the 2010 Final EIR, material deliveries and other truck traffic would be limited to using Little Panoche Road.

Vehicle traffic along the County roads associated with personnel commuting to and from the site and the delivery of material and equipment would increase substantially during construction of this project; and mortality of San Joaquin kit fox from vehicle collision may already be an important mortality factor in the Panoche Valley (Constable et al., 2009; Williams et al., 1996). Potesntial for vehicular collision would be increased, particularly during any nighttime activities.

The Applicant would implement San Joaquin Kit Fox Conservation Measures, which would add additional specificity and protective measures to the measures in the 2010 Final EIR. The final measures will be approved by CDFW and USFWS and will address the preservation and protection of kit fox travel corridors on the project site and the enforcement of a daytime speed limit of 15 mph and a night-time speed limit of 10 mph. Speed limits would not exceed 25 mph on public roads in the vicinity of the Project site. If a den is located near a Project road, speed would be reduced to 10 mph, and the den would not be excavated. The majority of the daily personal vehicle traffic to the site would originate from the west on Panoche Road. This area is less suitable for kit fox, and delivery trucks would be limited primarily to daylight hours. The duration of the construction under the Revised Project would affect only two pupping seasons instead of the five pupping seasons that would have been affected under the Approved Project. The re-design of the Project has created large open areas between the solar panel arrays, roadways, and other Project infrastructure.

While the Revised Project may permanently impact up to 1,888 acres, and have additional indirect impacts within the remaining 618 acres within the Revised Project footprint, the Applicant has acquired rights to 22,914 acres of mitigation land. As described, these mitigation lands are comprised of approximately 10,782 acres of high value habitat within the Panoche Valley that have slopes less than 11 percent and are contiguous with the Valley floor. The mitigation lands are occupied by San Joaquin kit fox (as well as blunt-nosed leopard lizard, San Joaquin antelope squirrel, and giant kangaroo rat), and are likely to contain the same genetically distinct populations of these species that occur on the Revised Project site.

Mitigation Measures BR-G.1 through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Habitat Mitigation and Monitoring Plan is developed and implemented for mitigation lands. Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. In addition, Mitigation Measure BR-19.1 requires pre-construction surveys and implementation of avoidance measures for San Joaquin kit fox. The Applicant would also implement the San Joaquin Kit Fox Conservation Measures. With the implementation of these mitigation measures, and the protected 500-meter wide San Joaquin kit fox corridor through the Revised Project site, impacts to San Joaquin kit fox would remain less than significant (Class II).

Impact BR-20: The project could result in the loss of jurisdictional wetland <u>and ephemeral</u> habitats (Class II)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but reduced in extent based on updated survey data provided by the Applicant. The 2010 Final EIR identified approximately 18,700 linear feet of the ephemeral drainage channels within the Panoche Creek drainage, and approximately 7,025 linear feet of Las Aguilas Creek within the project site subject to the jurisdiction of USACE and/or CDFW. Based on additional surveys and consultation with USACE

since 2010, some of the previously identified ephemeral drainages, specifically 5,951 linear feet of such drainages on the eastern side of the Revised Project site have been deemed waters of the U.S. or federal jurisdictional waters. Impacts associated with these features are described below. See Figure C.6-7 for an overview of state and federal jurisdictional waters in the project area and Figure C.6-8 for an overview of Revised Project impacts on state water crossings.

The 2010 Final EIR concluded that portions of the ephemeral drainages would be permanently altered as a result of road crossings, but did not identify specific acreages or linear feet of impacts. However, based on the Approved Project footprint and the number of ephemeral drainages crossing the project site, particularly along the eastern boundary of the project site at the base of the BLM lands, the Approved Project, including internal roadways, solar arrays, and other project components would have impacted these drainages. The 2010 Final EIR concluded that compliance with various regulatory requirements, including securing the requisite 404 permit from the USACE for federal jurisdictional waters and 401 Water Quality Certification from the RWQCB, and obtaining a Lake and Streambed Alteration Agreement from the CDFW for impacts to other ephemeral washes or state jurisdictional waters, and implementation of the recommended mitigation would reduce impacts to a less than significant level.

Based on survey information provided by the Applicant since the 2010 Final EIR, approximately 7.86 acres of ephemeral drainage channels would be subject to impacts by the Revised Project. Survey data indicates that approximately 0.12 acres of USACE jurisdictional habitat would be subject to impacts associated with crossings of the perimeter road and civil work needed to control stormwater and erosion, and 7.82 acres of ephemeral drainages that constitute waters of the state subject to CDFW jurisdiction would be subject to impacts throughout the remaining areas of the Revised Project site.

There are five planned crossings of federally jurisdictional washes. Crossings would be designed based on the USACE 404(b)(1) analysis and the *Least Environmentally Damaging Practicable Alternative*. The two crossings on the western side of the Revised Project would utilize single-span bridges, whereas the three affected crossings on the eastern side of the Revised Project would involve installation of a pipe arch culvert, low water crossings and filling/grading of washes. In total, approximately 3,503 linear feet of drainages on the eastern side of the Revised Project would be subject to permanent impacts associated with crossings. The two drainage crossings on the western side of the Revised Project would not be subject to fill that traverses the entire drainage; therefore, there is not a linear component for impacts to the two drainage crossings on the western side. A description of each crossing area is provided below and in Applicant documents available on the County website (www.cosb.us), Preliminary Ordinary High Water Mark (OHWM) Figures (Figure 1: Preliminary Ordinary High Water Mark Drainage 10[4], Figure 2: Preliminary Ordinary High Water Mark Drainage 14, Figure 3: Preliminary Ordinary High Water Mark Drainage 19, Figure 4: Preliminary Ordinary High Water Mark Drainages 21[5] and 22).

The single span bridges on the western side of the Revised Project would require a small amount of fill of the ephemeral stream channel. This fill is associated with the placement of rock armoring (riprap) to protect the banks at each crossing. This armoring would occur at and immediately upstream of the abutments/footings for safety and stability of the bridges during and after high stream flow events, and to protect the long term life of the structures, and to ensure the bridges are available for use during and immediately following high stream flow events. Permanent disturbance would result in approximately

[4] Drainage 10 was identified as federally jurisdictional, but will not be subject to impacts.

[5] Drainage 21 was identified as federally jurisdictional, but will not be subject to impacts.

0.001 acres of cut and fill within the OHWM of the Las Aquilas Creek (Drainage/Crossing 1) and approximately 0.001 acres of cut and fill within the OHWM of Panoche Creek (Drainage/Crossing 2).

The single span bridges would result in permanent upland habitat disturbance based on the use of permanent upland fill needed at each end of the span to accommodate the higher deck elevation. There would be approximately 3,020 square feet (0.07 acre) of permanent upland disturbance from placing fill for the two bridges (excluding the access road). These elevated roads and approaches will result in a wider footprint that could impact additional covered species habitat adjacent to the drainages. Additionally, there would be temporary disturbance of adjacent upland from installation of the bridges and from staging areas needed to assemble the bridge parts and lift them into place.

On the eastern side of the Revised Project, construction would impact three of the five drainages delineated by the USACE (Drainages 14, 19 and 22). The construction of the pipe arch culvert to be placed at Drainage 14 and the necessary grading/filling of the downstream channel would result in the permanent disturbance of approximately 0.05 acres (1,545 linear feet) of impacts below the OHWM associated with this drainage. There would be less than 0.01 acres (47 linear feet) of disturbance associated with the culvert and roadway installation and 0.0.05 acres (1,497 linear feet) of disturbance would be caused by the filling/grading of the channel. The planned construction of the low water crossings (LWCs) proposed at Drainage 19 include the impacts to approximately 0.04 acres (1,165 linear feet) of jurisdictional drainages due to the installation of the LWC and the associated necessary grading/filling of the drainage below the LWC installations. At Drainage 19, the construction LWC would permanently impact approximately 0.003 acres (89 linear feet) while the grading/filling of the downstream channel would result in approximately 0.038 acres (1,039 linear feet) of permanent impact[6].

The planned impacts to the jurisdictional drainage at Drainage 22 involve the construction of the perimeter roadway and the diversion of the jurisdictional drainage into a roadside drainage feature. As stated previously, this roadside drainage feature would convey the surface water from the impact area southeast to an unnamed ephemeral drainage. The jurisdictional channel downstream of roadway installation would be filled and graded and protected from erosion as stated above. This construction would impact approximately 0.03 acres (794 linear) of jurisdictional stream.

Any activities that involve modification of the bed, bank, or channel of CDFW jurisdictional waters would require permits and approvals from State and federal agencies. Federal crossings would be permitted through obtaining a USACE Section 404(b)(1) permit and 401 Certification by the RWQCB. The federal crossings, as well as the crossings of washes, creeks, and drainages that are potentially waters of the state and regulated by CDFW, would be permitted through the submittal of an LSAA Notification and ultimately an LSAA that would include requirements for protection of biological resources.

Since the Revised Project would result in the disturbance of more than one acre of land, the Applicant is required to comply with the National Pollution Discharge Elimination System (NPDES) General Permit for Construction Activities, and would file a Notice of Intent (NOI) and prepare a Storm Water Pollution Prevention Plan (SWPPP) outlining Best Management Practices (BMPs) to be implemented to minimize erosion, siltation, and contaminated runoff.

Due to the extent of the impacts associated with solar array development and the permanent nature of impacts to this habitat in many areas spread over the Revised Project site, impacts to jurisdictional waters would be potentially significant absent mitigation. However, Mitigation Measures BR-G.1

[6] Impacts include grading and crossings and totals may overlap.

through BR-G.6 would ensure that (1) All construction personnel participate in the Worker Environmental Education Program; (2) Best Management Practices (BMPs) for biological resources are implemented; (3) A Habitat Restoration and Revegetation Plan is developed and implemented; (4) Biological construction monitoring is implemented; (5) Conservation easements are created for permanent habitat protection as appropriate; and (6) A Wetland Mitigation and Monitoring Plan (WMMP) is developed and implemented for mitigation lands. Mitigation Measure BR-1.1 would ensure the preparation and implementation of a Weed Control Plan and Mitigation Measure BR-1.2 would ensure the development of a Grazing Plan for vegetation management on the site. Mitigation Measure AQ-1.1 would reduce impacts from fugitive dust. Implementation of these mitigation measures would reduce both direct and indirect impacts to jurisdictional waters to less than significant levels (Class II).

Impact BR-21: The project would result in Polarized-Light Pollution that may result in negative effects on plant and wildlife communities (Class III)

This impact would remain largely the same under the Revised Project as identified in the 2010 Final EIR, but would be somewhat reduced in extent. The Revised Project would utilize a smaller number of larger PV panels than the Approved Project. The solar array area has been reduced to the 1,629 acres (approximately 1 million panels) from the 2,200 acres (3-4 million panels) in the Approved Project.

As described in the 2010 Final EIR, solar panels associated with the Revised Project would produce polarized light pollution that could confuse insects and potentially birds. Polarized light is utilized by many animals. Unpolarized light becomes strongly polarized, or aligned in a single, often horizontal plane, by reflection. The primary natural source of polarized light in the environment is water. Polarized light is used by at least 300 species of insects to recognize the surface of water bodies as a suitable place to lay their eggs, and many waterbird species may also utilize polarized light to locate water bodies (Horvath et al., 2009). It has also been documented that for a variety of birds, reptiles, fish, etc. that polarized-light pollution can affect their ability to detect natural polarized light patterns in the sky which can lead to effects on their navigation ability and ultimately effects on dispersal and reproduction (Horvath et al., 2009).

While the Revised Project would be smaller than the Approved Project, it would still occupy a substantial portion of the Panoche Valley. Construction of the Project would produce polarized-light pollution that could confuse insects and potentially birds. Because impacts to plants, insects, and birds as a result of polarized light pollution created are still speculative, Revised Project impacts stemming from polarized-light pollution are considered to be less than significant (Class III) and no additional mitigation is required.

Impact BR-22: The project could result in the exposure of wildlife to ~~toxic trace elements and high salt concentrations in the waste water evaporation pond~~ mortality in the construction water ponds (Class II)

The 2010 Final EIR stated that a lined evaporation pond, along with permanent and temporary storage tanks would be located near existing well sites to store and treat water used for construction and operation. The locations of these permanent water storage tanks, as well as the type and amount of temporary water storage have been modified for the Revised Project. In addition, the lined evaporation pond described in the 2010 Final EIR has been eliminated.

As described in the Revised Project, the Applicant proposes to construct three temporary construction water ponds with a combined capacity of approximately 4.4 million gallons. The temporary ponds would be removed at the end of construction. Temporary piping would be used to transport water from the

ponds to drop tanks at designated locations around the Project site. Permanent piping would be installed from permanent water storage tanks to operations and maintenance (O&M) building for use during operations, including providing water to the fire suppression system.

As described in the 2010 Final EIR, water storage tanks located near the O&M facility would store water needed for panel washing. Panel washing requires water with very low levels of dissolved solids. If required, a filter would be installed to filter total dissolved solids (TDS) from the well water source. No wastewater would be produced during the filtering.

While the risks to wildlife resulting from exposure to toxic trace elements and high salt concentrations at evaporation ponds have been eliminated under the Revised Project, potential direct and indirect effects on wildlife resulting from attractiveness of the construction ponds would remain with the construction of the Revised Project. Special-status bird species including waterfowl and shorebirds could be attracted to the ponds, increasing the risk of collision and electrocution from Project infrastructure. Special-status wildlife species in the area attracted to the ponds to drink could become trapped and be exposed to increased risk of mortality from drowning.

The Applicant would install temporary exclusionary fencing around the ponds for safety and to restrict access by special-status species. Mitigation Measure MM BR-22.1, outlining the fence installation and monitoring requirements, is applicable to the Revised Project's temporary construction ponds, and would reduce this impact to less than significant levels (Class II).

C.6.3.4 Changes to Solar Project Applicant Proposed Measures and Mitigation Measures

This section presents proposed changes to the 2010 Applicant Proposed Measures (APMs) and mitigation measures adopted by the County. All changes are shown with underline/strikeout. All mitigation measures that have not changed will remain applicable to the Revised Project and are presented in Appendix 3.

Based on a review of the requested revisions presented below, it was determined that the proposed revisions are acceptable, and would not increase the severity and/or intensity of impacts to biological resources. The proposed revisions represent clarifications based on updated biological survey information provided by the Applicant and/or updated design and construction details, and do not limit the overall effectiveness of the APMs and mitigation measures to reduce significant impacts to biological resources to less than significant levels.

Proposed Changes to Applicant Proposed Measures

Table C.6-4 presents the APMs that have been changed since the 2010 Final EIR, and explains the rationale for acceptance of each change. APMs that have not been changed are presented in Appendix 3.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-6 Project boundary fencing will be constructed using chain link approximately 6 feet in height. The bottom of the chain link fencing will be elevated off the surface of the ground approximately 5 to 6 ~~24~~ inches to allow for wildlife movement across the project site.	This minor change would not create a new biological impact or substantially increase the severity of a biological impact because 5 to 6 inch elevation above the surface of the ground is adequate for small mammals (including San Joaquin kit fox) to pass underneath (Cypher et al., 2009). This fencing design was approved by the CDFW and USFWS for the Topaz Solar project and the adjacent California Sun Valley Ranch. The 2010 Final EIR stated that the bottom of the perimeter fence would be 24 inch above the ground, which is not necessary for movement by San Joaquin kit fox. Therefore this revised APM is more appropriate and would not increase potential biological impacts.
APM BIO-7 In construction areas where ground disturbance is significant or where recontouring is required, surface restoration would occur as required by the landowner or land management agency as part of decommissioning. The method of restoration would normally consist of returning disturbed areas back to their natural contour, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.	These minor language changes would not create a new biological impact or substantially increase the severity of a biological impact. The revision simply clarifies the timing of restoration of the areas that will be permanently impacted by the Project. Restoration would occur during decommissioning. Restoration of temporary impacts during construction is addressed in APM BIO-39.
APM BIO-8 ~~Washes and streams should be avoided by the project including a 50-ft buffer as measured from the top-of-bank on both sides of these features.~~	Deleted. The removal of this APM would not create a new biological impact or substantially increase the severity of a biological impact because Project features that impact state and federal jurisdictional waters will be permitted through approval of a USACE 404 permit and/or Streambed Alteration Agreement (SAA) from CDFW. Grading plans for the entire Project would be reviewed by USACE and CDFW through approval of the 404 and SAA, and protective buffers would be consistent with these permitting requirements.
APM BIO-9 Protocol surveys were completed for the entire Project Footprint and additional preconstruction surveys will be ~~conducted during the April 15 to July 15 adult BNLL season prior to any~~ completed within 30 days of ground disturbance ~~associated with constructing the limited number of bridges necessary for the project. Therefore, in these few cases where complete avoidance of washes and streams are not feasible the project will establish 30-ft buffers from small mammal burrows (whether BNLL are detected at them or not) in wash bottoms and 50-ft buffers from any observed BNLL location in these features. These buffer zones will be demarcated by~~ for each construction ~~fencing to ensure that construction crews do not enter the avoidance zone.~~ area. Monitors will be present during construction activities.	These minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because protocol-level blunt-nosed leopard lizard surveys have been completed by the Applicant since the approval of the 2010 Final EIR and preconstruction surveys would be performed prior to any ground disturbance.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-10 ~~Protocol surveys will be conducted during the adult season period of April 15 to July 15 prior to any surface disturbance. Project elements will avoid all observations of BNLL based on a 5-acre buffer that will be encompass the sighting and include the best available habitat within this 5-acres; the closest edge of the buffer to the sighting will be 50 ft.~~	Deleted. The removal of this APM would not create a new biological impact or substantially increase the severity of a biological impact because protocol-level blunt-nosed leopard lizard surveys have been completed by the Applicant since the approval of the 2010 Final EIR for the Revised Project site.
APM BIO-11 ~~All construction activity including all vehicular traffic should be contained within the defined construction zone. The construction zone will be demarcated with exclusion fencing to ensure that a BNLL does not errantly wander into the construction zone. An onsite monitor will be present during all construction activity in this area. In addition, pre-construction surveys will be conducted no more than 30 days prior to any surface disturbance and on-site monitor will be present during all construction activities to ensure that the project does not harm or injure individual BNLL. If a BNLL is detected during construction by the on-site monitor, than the 5-acre buffer as described above will be established around this location and the project will avoid constructing any project elements within this buffer. The project will also implement all BMPs as discussed below.~~ The BNLL Protection Plan will be implemented at the site for construction activities.	Deleted. The changes would not create a new biological impact or substantially increase the severity of a biological impact because the measures included in the Blunt-nosed Leopard Lizard Protection Plan provide additional specificity related to pre-construction surveys, construction monitoring, and other protective measures that are either consistent with, or more protective than, the measures presented in the 2010 Final EIR. The Blunt-nosed Leopard Lizard Protection Plan was also included in the Biological Assessment for the project and is being reviewed by the USFWS.
APM BIO-12 **Preserve Undisturbed Onsite Lands.** Of the total project site area ~~of 4,885 acres~~, the applicant will limit the total ~~permanent~~ disturbance area to ~~2,437 acres (designating 2,448 acres for preservation) for solar blocks, roads, substation (including O&M building and transmission tower connections), parking lots, demineralization plant, evaporation pond, water tanks, washway crossings and utilities trenching.~~2,506 acres (1,888 acres of which will be permanently disturbed). Prior to the issuance of building or grading permits ~~for each phase of construction~~, the applicant will submit for the County's review and approval a site plan, building plan or grading plan, that delineates and calculates the total disturbance area for facilities proposed for that ~~phase~~ area of construction and will include a note on those plans that describes how these areas will be demarcated on the ground through the placement of appropriate staking, signage, or equally effective technique to ensure that construction is confined to the disturbance area. The applicant will implement on the ground demarcation of the disturbance area in accordance with the approved plan(s).	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact. The change clarifies the extent of permanent impact area is based on the smaller impact area of the Revised Project and eliminates the reference to phased construction.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-13 **On-site Conservation Measures for Blunt-nosed Leopard Lizard** ▪ Project is avoiding impacts by staying out of the floodplain and by buffering any historic BNLL sighting ~~by~~ with a ~~19~~52.4-acre area.~~(3 standard deviations from the mean male home range size of recent unpublished data for the Carrizo Plain).~~ ▪ Provide for connectivity of these avoided areas, ~~which will be largely accomplished via the avoided wash/creek habitat~~ through the Valley Floor Conservation Land. ▪ Project is also integrating a series of other avoidance measures by APM and MM to allow the applicant to construct and operate in a manner that will not result in take of individuals ~~(e.g., protocol surveys prior to developing a phase, preconstruction surveys, education program of workers, site restrictions on access and operations, etc.).~~ ▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species ~~On-going monitoring based on the occupancy sampling will be used to determine changes in use of the site.~~ ~~This monitoring will inform an adaptive management approach to site management such as modifications of the grazing regime.~~ The site will implement the BNLL Protection Plan that was included in the Biological Assessment and reviewed by the U.S. Fish and Wildlife Service.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact. On the contrary, the revision reflects a significantly larger blunt-nosed leopard lizard avoidance buffer that is the result of further discussion with the resource agencies since 2010. The measure also refers to the Valley Floor Conservation Area, which is more extensive and offers greater species protection than the area included in the Approved Project, and implementation of the comprehensive Blunt-nosed Leopard Lizard Protection Plan. The revisions further reflect the completion of the blunt-nosed leopard lizard protocol-level surveys and the results of those surveys.
APM BIO-14 **Off-site Conservation Measures for Blunt-nosed Leopard Lizard** BNLL have ~~yet to be~~ been detected on the Mitigation Lands (Valley Floor Conservation Land and ~~therefore their ability to compensate for habitat impacts is not presently known. Solargen will acquire 7,311 acres of lands that are suitable for BNLL. This could be the~~ Silver Creek Ranch Conservation Land). These Mitigation Lands~~, some other lands known to support the species or a combination of the~~ two are included in the Project's Conservation Management Plan.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact. The revisions acknowledge, based on updated survey data, the fact that blunt nosed leopard lizard are present within the Valley Floor Conservation Lands and Silver Creek Ranch, which are both part of the Revised Project's conservation management plan.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-15 **On-site Conservation Measures for Giant Kangaroo Rat** ▪ Project is also integrating a series of avoidance and minimization measures by APM and MM to allow the applicant to construct and operate in a manner that will ~~not~~ minimize <u>to</u> the extent practicable impacts to individuals (e.g., preconstruction surveys, translocation efforts, education program of workers, site restrictions on access and operations, etc.). ▪ <u>Project will utilize the Giant Kangaroo Rat Relocation Plan to relocate Giant Kangaroo Rat present on the site prior to the start of construction.</u> ▪ Restoration measures (soil stockpiling and revegetation efforts) will restore temporarily disturbed areas so they provide suitable areas for the species ▪ ~~On-going monitoring based on the occupancy~~ Occupancy sampling ~~will be~~ was used to determine changes in ~~use~~ <u>layout</u> of the site. This monitoring ~~will inform~~ <u>informed</u> an adaptive management approach to site management ~~such as modifications of the grazing regime~~	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact. The revisions add a GKR relocation plan requirement and update the language of the APM based on updated survey data provided by the Applicant.
APM BIO-16 **Off-site Conservation Measures for Giant Kangaroo Rat** ▪ Mitigate at a 3:1 ratio ▪ Mitigate an additional 1:1 if after 5 years of monitoring the temporarily restored areas are found to no longer support the species. ▪ Mitigation Lands ~~provide 10,331 acres of land (4.2:1 ratio of mitigation to impact) that on average support equivalent density of burrow clusters km^2 that the Project Site does. This is~~, <u>including Valley Floor Conservation Lands, Silver Creek Ranch Conservation Lands, and Valadeao Ranch Conservation Lands provide</u> greater than the 3:1 ratio required assuming the project maintains residual value in the temporarily disturbed areas that are restored on the Project Site~~ and greater than the 4:1 ratio that would eventual be required if the project could not maintain the residual value for GKR in the temporarily disturbed areas~~. ▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime. Off-site lands will be managed by a third party ~~such as the BLM or California Rangeland Trust.~~ <u>selected in consultation with CDFW and USFWS.</u>	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions only add additional specificity related to the identity of the Mitigation Lands.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-19 **Off-site Conservation Measures for San Joaquin kit fox** ▪ Mitigate 3:1 for loss of habitat, with an additional 1:1 if after 5 years of monitoring the temporarily restored areas are found to no longer support the species. ▪ Based on the Haight et al. (2002) spatial model, there are 1010 acres are of high suitability and 9,026 acres are of moderate suitability on the portions of Mitigation Lands. Therefore, the mitigation lands provide 10,036 acres of suitable habitat for the kit fox. The 10,036 acres that provide suitable habitat for kit fox on the Mitigation Lands results in a ~~4.1:1 replacement ratio. This is greater than the 3:1 ratio required assuming the project maintains residual value in the temporarily disturbed areas that are restored on the Project Site and greater than the 4:1 ratio that would eventual be required if the project could not maintain the residual value for kit fox in the temporarily disturbed areas~~ minimum of a 4.1:1 replacement ratio. In addition, a SJKF corridor has been created through the center of the Project Footprint to allow for movement of the species. ▪ Monitoring of the site will permit an adaptive management program such as modifications of the grazing regime. ▪ Off-site lands will be managed by a third party such as the BLM or California Rangeland Trust.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions only add additional specificity related to the identity of the Mitigation Lands and the extent of suitability for San Joaquin kit fox

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-20 **Employee Education Program** ▪ The Employee Education Program familiarizes ~~Solargen~~ Applicant employees and contractors with BMPs and other measures associated with ~~BNLL~~ protected species potentially on the project and in the vicinity. This program is designed to ensure all personnel who work at the PVSF are aware of and can identify the ~~BNLL~~ species and the measures implemented to avoid individuals of this species. In addition, contact names and numbers are given to which personnel can report incidents regarding ~~BNLL~~ protected species. ▪ An employee environmental program (awareness) will be administered to all new employees and to all other employees every 2 years. Upon completion of the program, the employees are given a badge or hardhat sticker that is required for admittance onto the PVSF. ~~Badges will include the employee's picture and will be color-coded and dated in order to show that the employee is current with required training.~~ ▪ Prior to beginning work at the PVSF, all new employees, contractors, and other personnel that work at the PVSF will complete an employee education program that includes a section on ~~BNLL~~ protected species awareness. Personnel must take the Employee Education Program administered test. Training included in the Employee Education Program pertains to ~~BNLL~~ protected species identification, ~~BNLL~~ species basic natural history, components of avoidance program, familiarity with pre-construction surveys and what they are and how they are administered, BMPs, and how to report incidents involving ~~BNLL~~ protected species. ▪ The employee or contractor for ~~Solargen~~ the Applicant will be shown examples (i.e., pictures) of ~~BNLL~~ protected species and their burrows, or other sign. Basic natural history facts for the ~~BNLL~~ protected species will be included in information given to employees. All BMPs will be provided in easy to carry pamphlets for reference while working at the PVSF and mitigation lands. A review of the BMPs will be conducted for each employee and a test will be administered to verify that employees have a familiarity with the provisions in the BMPs.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions only update the Applicant name and specify that the WEEP training will cover all protected species.
APM BIO-21 List of Best Management Practices ~~(LOA 5/24/10).~~ Refer to updated Supplemental EIR for a list of Best Management Practices. All employees and contractors will be made aware of the BMPs, and those BMPs that are pertinent to employee work conduct will be implemented. ~~They~~ Applicable measures are listed below ~~(a through r).~~	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions only update the language of the APM for minor clarifications and updated survey data provided by the Applicant.
APM BIO-22 a) Prior to initiation of construction in ~~of~~ a project ~~Phase~~ area (i.e., any activity that results in surface disturbance), a qualified biologist shall conduct a BNLL education program (e.g., tailgate briefing) for all project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of BNLL in the ~~project area~~ adjacent areas, take avoidance measures being implemented during the project, reporting requirements if an incident occurs, and applicable definitions and prohibitions under the Fish and Game Code for fully protected species, and relevant provisions of the federal and state Endangered Species Act.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-23 ~~b) All activities that will result in permanent or temporary ground disturbances shall be preceded by protocol surveys prior to the construction and then by a pre-construction survey within 30 days of construction by a qualified biologist. The biologist(s) shall identify and clearly mark the location of areas where any BNLL were observed. A 50 ft buffer will be established around all sightings with highly visible markers.~~	Deleted. The removal of APM BIO-23 would not create a new biological impact or substantially increase the severity of a biological impact because the revisions reflect the completion of protocol-level surveys completed by the Applicant since the approval of the 2010 Final EIR.
APM BIO-24 ~~c~~ b) A biological monitor(s) shall be present while ground disturbing activities are occurring. In addition to conducting preconstruction surveys, the biological monitors shall aid crews in satisfying take avoidance criteria for BNLL and implementing project mitigation measures. ~~Biological monitors shall accompany vehicles and crews throughout the project area if the qualifying biologist considers it necessary in order to avoid individual BNLL.~~	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions reflect the results of the protocol-level surveys completed by the Applicant since the approval of the 2010 Final EIR within the Revised Project site and the measures included in the Blunt-nosed Leopard Lizard Protection Plan.
APM BIO-25 ~~d~~ c) Biological monitors are empowered to order cessation of activities if take avoidance and/or mitigation measures are violated and will notify ~~Solargen's~~ the Applicant's environmental representative.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.
APM BIO-26 ~~e) Unless biological monitors allow alterations to routes, all project vehicles shall be confined to defined access routes that will be staked and/or flagged. All observed BNLL shall be avoided by a flagged 50 ft buffer to alert project personnel to their presence. All project related flagging shall be collected and removed after completion of the project.~~	Deleted. The removal of APM BIO-26 would not create a new biological impact or substantially increase the severity of a biological impact because the content is addressed in APM BIO-9, APM BIO-11, APM BIO-13, and APM BR-10.1.
APM BIO-27 d) ~~f) Solargen~~ The Applicant shall appoint a ~~Solargen~~ representative who will be the contact source for any employee or contractor who inadvertently kills or injures a BNLL or who finds a dead, injured, or entrapped individual BNLL. The representative will be identified during the pre-performance educational briefing.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.

Table C.6-4. Changes to 2010 Final EIR Biological Resources Applicant Proposed Measures for the 2014 Revised Project

APM (With Changes Shown in Underline/Strikeout)	Analysis
APM BIO-28 ~~ge~~) Any contractor, employee(s), or other personnel who inadvertently kills or injures a BNLL shall immediately report the incident to their representative. The representative shall contact the ~~Solargen~~ Applicant's environmental representative and, if feasible, a qualified biologist. ~~Solargen~~ The Applicant will contact ~~CDFG~~CDFW immediately in the case of a dead, injured, or entrapped BNLL. The ~~CDFG~~CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. State Dispatch will contact the local warden or biologist. The qualified biologist will also document all circumstances of death, injury or entrapment of BNLL. The biologist will 1) take all reasonable steps to enable the individual animal to escape should it be entrapped, 2) contact ~~CDFG~~ CDFW or other appropriate authorities to identify an approved rehabilitation center and appropriate capture and transport techniques should the covered animal be injured, and 3) document circumstances of death in writing and if possible photographing dead animal in situ prior to moving. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured BNLL, and any other pertinent information. The USFWS contact for this information is the Endangered Species, Program Field Office, 2493 Portola Rd., Suite B, Ventura CA 93003. The dead covered animal can be transported to California State University at Bakersfield or the Endangered Species Recovery Team in Bakersfield for storage and research if ~~CDFG~~ CDFW approves.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.
APM BIO-29 ~~hf~~) To prevent inadvertent entrapment of ~~BNLL~~ protected species, all open holes, steep-walled holes, or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be ~~more~~ no less than 10 inches in width and should reach to bottom of trench). Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revision was made to address all protected species, not just blunt-nosed leopard lizard.
APM BIO-30 ~~i~~ g) All spills of hazardous materials shall be cleaned up immediately in accordance with the ~~Solargen~~ Spill Prevention Plan.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.
APM BIO-36 ~~o~~ m) Motorized vehicles are prohibited within occupied blunt-nosed leopard lizard habitat. If not avoidable, that area will be considered temporarily disturbed and size will be limited in width to 25 feet (12.5 feet on either side of the centerline) and a biological monitor will be present.	The only change to this measure is clarification that a biological monitor would be present if a vehicle cannot avoid occupied blunt-nosed leopard lizard habitat. This change would not increase impacts.
APM BIO-39 ~~r~~ p) Upon completion of any ~~Phase~~ Project component, all areas that are significantly disturbed and not necessary for future operations, shall be stabilized to resist erosion, and re-vegetated and re-contoured if necessary, to promote restoration of the area to pre-disturbance conditions.	The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are editorial in nature, and the effect of the measure was not altered.

Proposed Changes to Mitigation Measures

This section presents the analysis each proposed change to adopted mitigation measures. All changes are shown with underline/strikeout. There are 18 mitigation measures that have not been modified for the Revised Project; the full text of these measures is presented in Appendix 3.

MM BR-G.2 Proposed Changes

The minor language changes to the specified best management practices would not create a new biological impact or substantially increase the severity of a biological impact. The revisions provide additional specificity or changes that are either consistent with, or in some cases more protective than, the measures presented in the 2010 Final EIR. The revisions also recognizes that both the USACE and CDFW have jurisdiction over certain ephemeral waters on the site and will be reviewing the Revised Project through approval of the 404 Permit and Lake and Streambed Alteration Agreement, and imposing protective measures will be consistent with these permitting requirements. Accordingly, the measure has been modified to allow impacts to jurisdictional waters to the extent that USACE and CDFW allow such activities recognizing that USACE and CDFW will require avoidance and minimization measures as part of this permitting process that would be protective of biological resources.

MM BR-G.2 **Implement Best Management Practices (BMPs).** BMPs shall be implemented as standard operating procedures during all ground disturbance and construction-related activities to avoid or minimize project impacts on biological resources. These BMPs shall include but are not limited to the following:

- Compliance with BMPs will be documented and provided to the County in a written report on an annual basis. The report shall include a summary of the construction activities completed, a review of the sensitive plants and wildlife encountered, a list of compliance actions and any remedial actions taken to correct the actions, and the status of ongoing mitigation efforts.
- Prior to ground disturbance of any kind the project work areas shall be clearly delineated by stakes, flags, or other clearly identifiable system.
- Vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- Speed limit signs, imposing a daytime speed limit of 15 miles per hour, will be installed throughout the project site prior to initiation of site disturbance and/or construction. A night-time speed limit of 10 mph will be adhered to on the Project site, and will not exceed 25 mph on public roads in the vicinity of the Project site. If a SJKF den is located near a project road, speed will be reduced to 10 mph and the den will not be blocked or excavated. To minimize disturbance of areas outside of the construction zone, all project-related vehicle traffic shall be restricted to defined access routes that will be staked and/or flagged ~~established roads~~, construction areas, and other designated areas. These areas will be included in preconstruction surveys and to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts. Off-road traffic outside of designated project areas will be prohibited. All Project-related flagging shall be collected and removed after completion of the Project.
- No vehicles or equipment shall be refueled within 100 feet of an ephemeral drainage or wetland unless a bermed and lined refueling area is constructed. Spill kits shall be

maintained on site in sufficient quantity to accommodate at least three complete vehicle tank failures of 50 gallons each. Any vehicles driven and/or operated within or adjacent to drainages or wetlands shall be checked and maintained daily to prevent leaks of materials.

- All general trash, food-related trash items (e.g., wrappers, cans, bottles, food scraps, cigarettes), microtrash (i.e., broken glass, paper and plastic waste, small pieces of metal), and other human-generated debris will be stored in animal proof containers and/or removed from the site each day. No deliberate feeding of wildlife will be allowed.
- Development on the main project site will maintain existing hydrologic patterns with respect to runoff supporting seasonal wetlands, vernal pools and ephemeral drainages.
- All pipes and culverts with a diameter of greater than one inch shall be capped or taped closed. Prior to capping or taping the pipe/culvert shall be inspected for the presence of wildlife. In the event a pipe is inadvertently left open, the pipe will be inspected prior to moving. If encountered, the wildlife shall be allowed to escape unimpeded.
- No firearms will be allowed on the project site, unless otherwise approved for security personnel.
- To prevent harassment or mortality of listed, special-status species and common wildlife, or destruction of their habitats, no domesticated animals of any kind shall be permitted in any project area with the exception of trained working animals used specifically for livestock management or species surveys (e.g., horses, livestock working dogs, and scent detection dogs). Livestock and scent detection dogs shall be immunized against rabies, parvovirus, and distemper. ~~sheep or goat grazing for weed management. Dogs associated with sheep grazing shall not be authorized.~~
- Use of chemicals, fuels, lubricants, or biocides will be in compliance with all local, state and federal regulations. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted the use shall be restricted to interiors of building and zinc phosphide shall be used because of lower risk of poisoning San Joaquin kit fox and American badgers.
- Any contractor or employee that inadvertently kills or injures a threatened or endangered, or other legally protected, animal, or finds one either dead, injured, or entrapped, will immediately report the incident to the on-site biological monitor or to the representative identified in the WEEP. The biological monitor or representative will contact the USFWS, CDFW, and County by telephone or email by the end of the day, or at the beginning of the next working day if the agency office is closed. In addition, formal notification shall be provided in writing within five working days of the incident or finding. Notification will include the date, time, location and circumstances of the incident. Any threatened or endangered species found dead or injured will be handled consistent with any direction provided by USFWS or CDFW.
- During the site disturbance and/or construction phase, ground disturbing activities (including, but not limited to grading, pile driving, trenching) ~~grading and construction~~

~~activities~~ before dawn and after dusk are prohibited. Other construction work and standard operations and maintenance activities would be limited to daytime hours ~~of~~ generally between 5 am to 9 pm based on sunrise and sunset times.

- Minimize vegetation removal within active construction areas. This will include flagging of sensitive vegetative communities or plants.
- There shall be no ground disturbance within 100 feet of washes and streams, ~~Observe an avoidance buffer of 100 feet~~ as measured from the top-of-bank on both sides of these features, except as described and allowed by the USACE 404 permit and approved LSAA, and except any work directly associated with and required to complete those actions described and allowed by the USACE 404 permit and approved LSAA. Project access roads shall be designed to reach all portions of the project without direct effect on washes, except as described and allowed by the USACE 404 permit and approved LSAA and/or where this provision conflicts with the San Benito County Fire Code. No bridges shall be installed over washes unless required by the San Benito County Fire Code or ~~CAL FIRE/San Benito County Fire Department~~ the agency responsible for providing fire protection services to the and/or as allowed by the USACE 404 permit and approved LSAA. Driving across washes shall be prohibited except for emergency ingress and egress required by the agency responsible for providing fire protection services to the and/or as allowed by the USACE 404 permit and approved LSAA ~~San Benito County Fire Code or CAL FIRE/San Benito County Fire Department~~.
- All excavation, steep-walled holes or trenches in excess of 6 inches in depth shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth dirt fill or wooden planks (wooden planks should be no less than 10 inches in width and should reach the bottom of the trench, and placed at an appropriate angle to allow SJKF to exit). Trenches shall also be inspected for entrapped wildlife each morning prior to onset of construction activities and immediately prior to covering with plywood at the end of each working day. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped wildlife. Any wildlife discovered will be allowed to escape before construction activities are allowed to resume, or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).
- Project personnel shall monitor all areas within 0.25 miles around the solar arrays (**in** accessible areas) on a regular basis (i.e., several times per week) for any dead animals, including wild animals or grazing animals such as cattle, goats, or sheep that are being used for vegetation management on the site. Any animals found dead will be removed immediately.
- New light sources will be minimized, and lighting will be designed (e.g., using down-cast lights) to limit the lighted area to the minimum necessary.
- Construction materials will not be stacked in a manner that ~~allows~~ encourages SJKF to establish den sites within the material.
- Use of rodenticides and herbicides in areas affected by the Project will be restricted to use within the Noxious Weed and Invasive Plant Control Plan. Herbicides used for noxious weed control would be applied in accordance with BLM-approved procedures and other federal and state regulations. Applications will be applied by licensed appli-

cators in accordance with label directions and other restrictions mandated by the U.S. Environmental Protection Agency, County Agricultural Commissioner, regional label prescriptions on use, California Department of Food and Agriculture, and other state and federal legislation.

Milestones: The Applicant shall submit a written report to the County on an annual basis for review.

Monitoring: Environmental monitor shall monitor for compliance with proposed BMPs.

MM BR-G.3 Proposed Changes

The minor language changes to the "success criteria" of the Habitat and Revegetation Plan would not create a new biological impact or substantially increase the severity of a biological impact because the revision is consistent with the Project's restoration goals and the overall the effect of the measure is not altered.

MM BR-G.3 **Develop and implement a Habitat Restoration and Revegetation Plan.** The Applicant shall restore disturbed areas to pre-construction conditions or better. Prior to the issuance of a building permit and removal of any soil or vegetation, the Applicant shall retain a County-approved, qualified biologist, knowledgeable in the area of annual grassland habitat restoration, to prepare a Habitat Restoration and Revegetation Plan (HRRP). The biologist would also be responsible for monitoring the initial implementation of the plan as the Applicant's attainment of the established success criteria.

The purpose of the HRRP will be to explicitly identify the process by which all disturbed areas shall be restored to at least pre-construction conditions. The plan will address restoration and revegetation related to disturbance from construction. It will also address restoration and revegetation required after decommissioning of the project. The plan shall include, at a minimum, the following items:

- Figures depicting areas proposed for disturbance – The HRRP shall include detailed figures indicating the locations of areas proposed for temporary and long-term disturbance. These figures shall be updated, as necessary, to reflect current site conditions should they change.

Soil Restoration Plan

- A soil baseline study shall be conducted before ground-disturbing activities at the proposed project site. The County may determine that the geotechnical survey conducted for the EIR may satisfy this requirement.
- Locations and details for topsoil salvage and storage – The HRRP shall identify areas within the construction footprint where topsoil is present and can be salvaged and stockpiled for replacement during revegetation activities.

  Where topsoil is present, but is wholly dominated by invasive non-native species or other noxious plant species it will not be used in revegetation because the non-native seed bank would outweigh any benefit for revegetation the soil may have. Areas characterized as California Annual Grassland will require topsoil salvage, as follows:

- Between three and twelve inches of topsoil shall be salvaged from where it must be temporarily removed.

- Topsoil shall not be mixed or stored with spoil material. The length of time topsoil is stored shall not exceed two years.
- For disturbed areas where topsoil was removed, redistribution shall begin immediately after re-grading, weather permitting, and depths shall vary between three and 12 inches depending on the depth of topsoil stripped.
- Replaced topsoil shall be left in a roughened condition to discourage erosion. Additional erosion control and soil stabilization may be required on steeper slopes, on topsoil susceptible to wind erosion, etc.
- If compaction, rutting, or crushing occurs prior to seeding, the replaced topsoil shall be worked with a harrow, disc, spring, tooth, chisel plow, or similar implement. Fertilization shall not be utilized.
- Where electrical cables are buried, trenching shall occur in the proposed aisles between panel rows, and trenched areas shall be refilled as cables are buried and topsoil shall be replaced.
- After closure and decommissioning: (1) Structures and facilities shall be removed to a depth of 3 feet; (2) Graded areas shall be returned to original contours; and (3) As appropriate, highly-disturbed soils shall be supplemented with certified weed-free mulch.

Plant Restoration and Revegetation Plan

- Proposed species for restoration/revegetation – The species palate proposed for restoration/revegetation shall include a combination of native and non-native (based on current species composition in the restoration/revegetation areas) annual grasses and annual herbaceous species known to occur in the area. Due to the large non-native annual grass component currently present within most project area the intent of the HRRP is to introduce as many native species as possible recognizing that the colonization of the site by non-native annual grasses is likely.
- Seed source and collection guidelines – If possible, seeds from stock within the Panoche Valley or from within a 25-mile radius will be collected to maintain local genetic integrity. If seed collection from these areas is not possible then a seed source must be obtained from a local seed supplier familiar with native species. Seed will be limited to the species and quantity specified in the seed mix palette prepared for the project. All seed will originate from the project region, within +/- 1000 feet elevation of the Project site. The seed supplier chosen will provide a list of three references with the bid proposal. The references will include year, contact names, and telephone numbers. Seeds will be tested for percent purity, percent germination, number of pure live seeds per pound, and weed seed content. Seed testing will be the responsibility of the seed supplier.
- Planting methodology – A description of the preferred methods proposed for seeding shall be provided (e.g., hydroseeding, drill seeding, broadcast seeding). Additionally, a discussion on timing of seeding, type of irrigation system proposed, potential need of irrigation, type and duration of irrigation, and erosion controls proposed for revegetation activities shall be included.

- Invasive, non-native vegetation control – A comprehensive Weed Control Plan will be developed for the project and is detailed below under Impact BR-2. The Weed Control Plan will serve to prevent the type conversion of natural habitats to those dominated by invasive species.

Monitoring Plan

- **Monitoring program** – Areas subject to restoration/revegetation shall be monitored to assess conditions and to make recommendations for successful habitat establishment. Monitoring will be performed by County-approved, qualified biologist(s) knowledgeable in the area of annual grassland habitat restoration. Monitoring should include, at the minimum, following:

- **Qualitative Monitoring** – Qualitative monitoring surveys will be performed monthly in all restored/revegetated areas for the first year following planting in any phase of the project. Qualitative monitoring will be on a quarterly schedule thereafter, until final completion approval of each restoration/revegetation area. Qualitative surveys will assess native plant species performance, including growth and survival, germination success, reproduction, plant fitness and health as well as pest or invasive plant problems. A County-approved, qualified wildlife biologist will assist in monitoring surveys and will actively search for mammal and other wildlife use.

  Monitoring at this stage will indicate need for remediation or maintenance work well in advance of final success/failure determination. The monitoring reports will describe site progress and conditions and list all observations pertinent to eventual success, and make recommendations as appropriate reg. remedial work, maintenance, etc.

- **Quantitative Monitoring** – Quantitative monitoring will occur annually for years one to five or until the success criteria are met.

  Within each revegetation area, as shown figures referenced above, the biologist will collect data in a series of one-square-meter quadrants to estimate cover and density of each plant species within the revegetated areas. Data will be used to measure native species growth performance, to estimate native and non-native species coverage, seed mix germination, native species recruitment and reproduction, and species diversity. Based on these results, the biologist will make recommendations for maintenance or remedial work on the site and for adjustments to the approved seed mix.

  Where topsoil is replaced, a County-approved, qualified soil expert shall assess soil conditions after restoration is complete to ensure that Grade One agricultural soils are returned to their pre-construction condition.

- Success criteria – Criteria for successful restoration/revegetation of temporarily disturbed areas shall be <u>percent cover equal to that of preconstruction levels or better.</u> ~~100 percent vegetative cover.~~ This percentage shall include no more than a 10 percent non-native component, with the exception of intentionally/or naturally seeded non-native grasses that occurred in the area prior to site disturbance.

- Reporting – Reporting will include progress reports summarizing site status and recommended remedial measures that will be submitted by the biologist to the County quarterly, with the exception of the site visits immediately preceding the development of each annual status report (see below). Each progress report will list estimated species coverage and diversity, species health and overall vigor, the establish-

ment of volunteer native species, topographical/soils conditions, problem weed species, the use of the site by wildlife species, significant drought stress, and any recommended remedial measures deemed necessary to ensure compliance with specified performance criteria.

One annual site status report that summarizes site conditions will be forwarded by the biologist to the County at the end of each year following implementation of this plan. Each annual report will list species coverage and diversity measured during yearly quantitative surveys, compliance/non-compliance with required performance standards, species health and overall vigor, the establishment of volunteer native species, hydrological and topographical conditions, the use of the site by wildlife species, and the presence of invasive weed species. In the event of substantial non-compliance with the required performance criteria, the reports will include remedial measures deemed necessary to ensure future compliance with specified performance criteria. Each annual report will include, at the minimum:

1. The name, title, and company of all persons involved in restoration monitoring and report preparation
2. Maps or aerials showing restoration areas, transect locations, and photo documentation locations
3. An explanation of the methods used to perform the work, including the number of acres treated for removal of non-native plants
4. An assessment of the treatment success.

- **Final Closure Plan** - The HRRP shall also include a Final Closure Plan, which shall address the final infrastructure removal, restoration, and revegetation activities upon closure and decommissioning of the project. The Final Closure Plan shall include a cost estimate, adjusted for inflation, reflecting the costs of restoration, revegetation, and monitoring for the duration of time expected to fully restore impacted soil and vegetation communities impacted by the project. At least one year prior to planned closure and decommissioning the Applicant shall submit to the County an updated Final Closure Plan for review to determine if revisions are needed. The Applicant shall incorporate all required revisions and re-submit the Final Closure Plan to the County 90 days prior to the start of ground-disturbing activities associated with closure and decommissioning activities.

Milestones: County approval of Habitat Restoration and Revegetation Plan prior to the issuance of a building permit and a review of plan compliance prior to the final project inspection. County approval of Final Closure Plan shall be required prior to the start of ground-disturbing activities associated with closure and decommissioning activities.

Monitoring: An on-site environmental monitor shall be retained to ensure the compliance with measures set forth in the Habitat Restoration and Revegetation Plan.

MM BR-G.5 Proposed Changes

The very minor changes to this measure only clarify that a separate Wetland Mitigation and Monitoring Plan is being prepared and eliminate the reference to phased construction. These changes would not increase impacts.

MM BR-G.5 **Create permanent conservation easement(s) as compensation for impacts to biological resources.** To compensate for permanent impacts to plants and wildlife on the project site, habitat shall be preserved through the use of permanent conservation easements or an appropriate mitigation bank. This may include preservation areas within portions of the project site that are not impacted by the construction (or that are only temporarily disturbed and then restored) and operation of the project and/or mitigation lands outside the project boundary. Specific species and habitats that require conservation easements are defined below.

The Applicant shall provide funds for a "qualified land trust" (defined below) to acquire appropriate conservation easement(s), or shall donate appropriate conservation easement(s) to a qualified land trust or to an appropriate mitigation bank. The Applicant could also purchase a conservation easement, rather than fee title, from a landowner. A qualified land trust is defined as one that:

- Has substantial experience managing conservation easements that are created to meet mitigation requirements for impacts to special-status species
- Has substantial experience managing conservation easements on rangeland
- Has adopted the Land Trust Alliance's *Standards and Practices*
- Has a stewardship endowment fund to pay for its perpetual stewardship obligations.

The County shall determine whether a proposed conservation easement holder meets these requirements.

The Applicant shall also be responsible for donating to the land trust fees sufficient to cover: (1) Administrative costs incurred by the land trust in the creation of the conservation easement (appraisal, documenting baseline conditions, etc.) and (2) provide funds in the form of a non-wasting endowment to cover the cost of monitoring and enforcing the terms of the conservation easement in perpetuity. The amount of these administrative and stewardship fees shall be determined by the land trust in consultation with the County.

Conservation easement(s) shall also be subject to the following conditions:

- The locations of acceptable conservation easement(s) shall be developed with approval of CDFW and USFWS.
- The primary purpose of the conservation easement(s) shall be conservation of impacted species and vegetative communities, but the conservation easement(s) shall also allow livestock grazing when and where it is compatible with or deemed beneficial for the habitat needs of impacted species.

Conservation easement(s) shall:

- Be held in perpetuity by a qualified land trust (defined above).
- Be subject to a legally binding agreement that shall: (1) Be recorded with the County Recorder(s) along with a recorded "notice of conservation easement"; (2) Include "conservation easement" in the title of the recorded agreement(s); (3) Name CDFW or another organization to which the conservation easement(s) will be conveyed if the original holder is dissolved.

- Be subject to the management requirements outlined in Mitigation Measure BR-G.6 (Develop and implement a ~~Habitat~~ Wetland Mitigation and Monitoring Plan and/or Habitat Management Plan for mitigation lands).

Habitat preserved as mitigation for impacts to biological resources must be of equal or greater habitat value, based on the parameters defined in Tables C.6-6 and C.6-7 at the end of this section.

Vegetative communities. For impacts to on-site vegetative communities, conservation easement(s) or an appropriate mitigation bank shall preserve land at mitigation ratio of 1:1 (one acre preserved for each acre permanently impacted) and shall contain the same type and quality of vegetative communities as those that are impacted by the project. This mitigation may occur on lands used simultaneously as mitigation for other impacts.

Special-status plants. For impacts to State and Federally Threatened, Endangered, Proposed, Petitioned and Candidate plants, mitigation shall occur at a ratio of 1:1 (one acre preserved for each acre impacted). Compensation for temporary impacts shall include creation of conservation easements at a 0.5:1 ratio. The preserved habitat for a significantly impacted plant species shall be of equal or greater habitat quality after any restoration activities (as defined in [2010 Final EIR] Table C.6-6) to the impacted areas in terms of soil features, extent of disturbance, vegetation structure, and will contain verified extant populations, of the same size or greater, of the State or Federally listed plants that are impacted. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

California Species of Special Concern. The Applicant shall compensate for permanent impacts to the California Species of Special Concern (CSSC) addressed in Impact BR-7 at a ratio of 1:1 (one acre preserved for one acre impacted). Compensation for temporary impacts shall be required at a ratio of 0.5:1. Preserved habitat shall be of equal quality or greater quality than impacted habitat after any restoration activities (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat.

California tiger salamander. The Applicant shall compensate for temporary and permanent loss of known and potential breeding habitat, and upland habitat within a radius of 1.2 miles of known or potential breeding habitat, for California tiger salamanders with the creation of permanent conservation easement(s) or use of an approved mitigation bank.

California tiger salamanders may wander up to 1.2 miles from their breeding habitat in search of aestivation habitat; however, the migrations of most individuals appear to be more limited. Trenham and Shaffer (2005) found that 95 percent of all salamanders appear to aestivate within 2,100 feet of their breeding habitat. However, in a 5-year study conducted by Orloff (2007), the majority of salamanders in her study area appeared to be moving at least 0.5 miles to the nearest probable breeding ponds, and approximately 7 to 11 percent of those salamanders appeared to travel at least 0.75 miles to get to breeding ponds.

Impacts shall be mitigated by providing habitat preservation, enhancement, and management in perpetuity at graduated ratios for upland aestivation habitat. Breeding habitats and suitable upland habitat impacted within 2,100 feet of a known or potential breeding pond will be mitigated at a ratio of 3:1, suitable upland habitat located between

2,100 feet and 2,640 feet (0.5 miles) of a breeding pond will be mitigated at a ratio of 2:1, and suitable upland habitat located between 2,640 feet and 6,636 feet (1.2 mile) of a breeding pond will be mitigated at a ratio of 1:1. Temporary impacts to suitable upland and potential breeding habitat shall be mitigated at a ratio of 0.5:1. A suitable breeding pond is a depression with the potential to contain water for 12 weeks of the year; the depression need not pond for this duration every year to meet the definition of a potential breeding pond. Preserved habitat shall be the same quality or better quality after any restoration activity such as new pond creation (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat, shall consist of no more than three non-contiguous areas of land, and shall include high-quality breeding habitat at a ratio equal to or greater than the potential breeding habitat present within the fenceline of the project site (measured by acreage, not by number of breeding ponds). This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Blunt-nosed leopard lizard. The Applicant shall compensate for permanent impacts to blunt-nosed leopard lizards and their habitat with the creation of permanent conservation easement(s) or an approved mitigation bank. The Applicant shall compensate for impacts to suitable blunt-nosed leopard lizard habitat (as defined in [2010 Final EIR] Table C.6-7) at a 3:1 ratio for acreage permanently altered by construction, solar arrays, roads, buildings, switchyard, and other infrastructure. In addition, the Applicant shall compensate for functional degradation of suitable blunt-nosed leopard lizard habitat at a 2:1 ratio for areas surrounded by or bordered by solar arrays, or adjacent to the switchyard, building(s), perimeter fence, and other infrastructure. The mitigation areas must include occupied habitat that is of equal or greater habitat quality after any restoration activity compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Mountain plover habitat. The Applicant shall compensate for permanent impacts to habitat for wintering mountain plovers with the creation of permanent conservation easement(s) or an approved mitigation bank. Conservation easement(s) shall provide habitat preservation, in perpetuity at a ratio of 1:1 for all impacted acreage. Preserved habitat shall be occupied and be of equal or greater quality after any restoration activity (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Golden eagle foraging habitat. The Applicant shall compensate for permanent impacts to habitat for foraging golden eagles with the creation of permanent conservation easement(s). Conservation easement(s) shall provide habitat preservation, in perpetuity at a ratio of 2:1 for all impacted acreage. Preserved habitat shall be of equal or greater quality after any restoration activity (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

California condor foraging habitat. The Applicant shall compensate for permanent impacts to habitat for foraging California condors with the creation of permanent conservation easement(s). Conservation easement(s) shall provide habitat preservation, in perpetuity at a ratio of 2:1 for all impacted acreage. Preserved habitat shall be of equal or greater quality after any restoration activity (as defined in [2010 Final EIR] Table

C.6-6) compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Burrowing owl. The Applicant shall compensate for permanent impacts to burrowing owls or their habitat with the creation of permanent conservation easement(s) or an approved mitigation bank. The mitigation lands will be of equal or greater habitat quality after any restoration activity (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat. In accordance with California Burrowing Owl Consortium (1995) guidelines, an area of 6.5 acres per pair will be preserved and managed for this species. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Giant kangaroo rat. The Applicant shall compensate for permanent impacts to giant kangaroo rats and their habitat with the creation of permanent conservation easement(s) or an approved mitigation bank. The Applicant shall compensate for impacts to suitable giant kangaroo rat habitat at a 3:1 ratio for acreage permanently altered by construction, solar arrays, roads, buildings, switchyard, and other infrastructure. In addition, the Applicant shall compensate for functional degradation of suitable giant kangaroo rat habitat at a 2:1 ratio for areas surrounded by or bordered by solar arrays, or adjacent to the switchyard, building(s), perimeter fence, and other infrastructure. The mitigation areas must include occupied habitat that is of equal or greater habitat quality and support an equal or greater population of giant kangaroo rat after any restoration activity (as defined in [2010 Final EIR] Table C.6-7) compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

San Joaquin kit fox. The Applicant shall compensate for permanent impacts to San Joaquin kit fox and their habitat with the creation of permanent conservation easement(s) or an approved conservation bank. The Applicant shall compensate for impacts to suitable San Joaquin kit fox habitat at a 4:1 ratio for acreage permanently altered by construction, solar arrays, roads, buildings, switchyard, and other infrastructure. Of this 4:1, 2:1 shall be highly suitable habitat (Panoche Valley, slopes of 5 percent or less) and 2:1 shall be moderately suitable habitat (Panoche Valley, slopes of 15 percent or less). In addition, the Applicant shall compensate for functional degradation of suitable San Joaquin kit fox habitat at a 2:1 ratio for areas surrounded by or bordered by solar arrays, or adjacent to the switchyard, building(s), perimeter fence, and other infrastructure. This 2:1 shall be moderately suitable habitat (Panoche Valley, slopes of 15 percent or less). The mitigation areas must include occupied habitat that is of equal or greater habitat quality and support an equal or greater population of San Joaquin kit fox after any restoration activity (as defined in [2010 Final EIR] Table C.6-7) compared to the impacted habitat. In addition, mitigation areas must have slopes less than or equal to 11 percent (USFWS, 2010d). This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

San Joaquin antelope squirrel. The Applicant shall compensate for permanent impacts to San Joaquin antelope squirrel and their habitat with the creation of permanent conservation easement(s). The Applicant shall compensate for impacts to suitable San Joaquin antelope squirrel habitat at a 1:1 ratio for acreage permanently altered by construction, solar arrays, roads, buildings, switchyard, and other infrastructure. In addition, the Applicant shall compensate for functional degradation of suitable San Joaquin

antelope squirrel habitat at a 1:1 ratio for areas surrounded by or bordered by solar arrays, or adjacent to the switchyard, building(s), perimeter fence, and other infrastructure. The mitigation areas must include occupied habitat that is of equal or greater habitat quality and support an equal or greater population of San Joaquin antelope squirrel after any restoration activities (as defined in [2010 Final EIR] Table C.6-6) compared to the impacted habitat. This mitigation may occur on lands used simultaneously as mitigation for impacts to other species.

Milestones: Prior to the disturbance of vegetation, the Applicant shall obtain County approval of the location of mitigation lands, the holder of conservation easements, and the restrictions contained in the conservation easement(s) created for the permanent protection of these lands. Documentation of recorded conservation easement(s) shall be submitted to and approved by the County prior to the start of construction. Verification of having met habitat mitigation requirements (per[2010 Final EIR] Tables C.6-6 and C.6-7 and supporting documentation) shall be reviewed and approved prior to construction of ~~each~~ the project ~~phase~~ by the County. This documentation will be posted on the County's website for public review. If this milestone is not met, construction shall not commence.

Monitoring: Mitigation lands will be monitored and maintained per the requirements set forth the Habitat Mitigation and Monitoring Plan prepared for the project, discussed below under MM BR-1.8. An annual report shall be submitted to the County.

MM BR-G.6 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because revisions reflect add additional clarity related to the requirement of the that the Applicant prepare both an Wetland Mitigation and Monitoring Plan (WMMP) and a Habitat Management Plan (HMP) to ensure the success of the mitigation lands that will be preserved as compensation for impacts to vegetative communities, wetlands, and listed or special-status plants and wildlife. The overall the effect of the measure was not altered**.**

MM BR-G.6 **Develop and implement Wetland ~~Habitat~~ Mitigation and Monitoring Plan and Habitat Management Plan for mitigation lands.** To ensure the success of on-site preserved land and acquired mitigation lands, required for compensation of permanent impacts to vegetative communities, wetlands, and listed or Special-Status plants and wildlife, the Applicant shall retain a County-approved, qualified biologist to prepare a Wetland ~~Habitat~~ Mitigation and Monitoring Plan (~~H~~WMMP) and a Habitat Management Plan (HMP). The W~~H~~MMP will focus on impacts and mitigation for jurisdictional waters and wetlands while the HMP will focus on the habitat and species management measures. The W~~H~~MMP and HMP will be submitted to the County of San Benito for approval, prior to the issuance of a construction permit. The W~~H~~MMP will be subject to approval and conditions set forth by regulatory agencies (USACE, Regional Water Quality Control Board [RWQCB], and CDFW).

The ~~HMMP~~HMP will include, at a minimum, the following information:

1. Summary of anticipated habitat impacts and the proposed mitigation.
2. Detailed description of the location and boundaries of undisturbed project areas proposed for preservation, off-site mitigation lands and a description of existing

site-wide conditions. The HM~~M~~P shall include detailed analysis showing that the mitigation lands meet the performance criteria outlined in Mitigation Measure BR-G.5 (Create conservation easements).

3. Discussion of measures to be undertaken to enhance (e.g., through focused management and/or restoration) the on-site preserved habitat and off-site mitigation lands for listed and special-status species.
4. Description of management and maintenance measures (e.g., managed grazing, fencing maintenance)
5. Discussion of habitat and species monitoring measures for on-site preservation areas and off-site mitigation lands, including specific, objectives, performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. Monitoring shall document compliance with Mitigation Measure BR-G.5 (Create conservation easements) and Mitigation Measures EM-1 and EM-2 (provide funding for and document environmental monitoring).
6. Development of a monitoring strategy for the monitoring of indirect impacts to vegetation and wildlife from alteration to the solar and hydric regimes as a result of solar panels.
7. Development of a monitoring strategy, which shall serve to document the persistence of blunt-nosed leopard lizard, giant kangaroo rat, San Joaquin kit fox, and San Joaquin antelope squirrel populations within the project site. This monitoring will be conducted for a minimum of 5 years after the completion of construction activities. The strategy shall include, at the minimum, the following:

    a) Documentation of pre-project population or use levels for the species noted above, based on results of focused pre-construction surveys and previously supplied applicant data.

    b) On-going monitoring of species populations upon completion of construction activities, while the project is in operation, for a minimum of three years.

    c) Monitoring of reference populations for each of these species on the mitigation lands will enable comparisons with changes in populations not impacted by the project. These results would allow for further refinement of project related affects and environmentally caused responses.

8. A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan will include specific triggers for remediation if performance criteria are not being met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of noxious weeds) will occur.

<u>The WMMP shall include, at a minimum, the following information:</u>

1. <u>Wetlands and waters impacts summary and habitat mitigation actions;</u>
2. <u>Goals of the restoration to achieve no net loss;</u>
3. <u>A map depicting the location of the mitigation site(s) and a detailed descriptions of existing conditions; and</u>
4. <u>A detailed description of the mitigation design, including:</u>

a. Location of new wetlands;

b. Description of existing and proposed soils, hydrology, geomorphology, and geotechnical stability, as well as results of applicable soils testing conducted at the mitigation site;

c. A detailed description of the steps required for site preparation and a conceptual grading plan—a formal package for plan sets, specs, and estimates for the grading and mitigation construction work shall be prepared based on the concepts set forth in the WMMP no fewer than fifteen days prior to starting work at the mitigation site;

d. A description of recommended soil amendments and other site preparation;

e. Development of a planting plan, including details on plan procurement, if necessary, propagation, allowable species for seeding and relative pounds/acre and applications;

f. Maintenance plan for created wetlands;

g. A description of specific monitoring metrics, and objective performance and success criteria, such as delineation of created area as jurisdictional wetland per USACE methods within five years of construction, and others;

h. Monitoring methods for vegetation and soils, and measures stipulating quantitative monitoring to occur once per year for at least five years following construction of the wetlands or until success criteria are met;

i. A list of reporting requirements and reporting schedule; and

j. A contingency plan for mitigation elements that do not meet performance or final success criteria within five years for created wetlands; this plan shall include specific triggers for remediation if performance criteria are not being met and a description of the process by which remediation of problems with the mitigation site (e.g., presence of noxious weeds) shall occur.

Milestones: WMMP and HMP must be submitted to the County prior to the ~~issuance of a~~ start of construction ~~permanent~~. Prior to final County inspection, initial and estimated final impact acreages must be presented to the County and acquisition of off-site lands must be verified.

Monitoring: Applicant must implement monitoring as prescribed in the W~~H~~MMP and HMP.

MM BR-1.1 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because revisions reflect the completion of the Weed Control Plan and the incorporation of that that Plan as a protective measure. The overall the effect of the measure was not altered**.**

MM BR-1.1 **Prepare and implement a Weed Control Plan.** Prior to the issuance of a building permit or any ground disturbance the Applicant shall retain a County-approved, qualified restoration ecologist or biologist to prepare a comprehensive adaptive Weed Control Plan

(WCP) to be administered during the construction and operation of the project for the purpose of invasive weed abatement. The WCP shall be submitted to the County of San Benito for review and approval and shall be updated and utilized for weed eradication and monitoring post-construction. The WCP shall include, but not be limited to, the following:

- **Pre-construction weed survey.** Conduct a pre-construction survey for weeds in all areas of proposed ground-disturbing activity, including, but not limited to, solar panel footing preparation and construction areas, assembly yards, access roads, and areas subject to grading for new or improved access roads. Weed populations that are (1) rated High or Moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006); and/or (2) known to aid and promote the spread of wildfires shall be mapped and described according to density and area covered. Areas with identified weed infestations shall be treated for target species, as described in the approved Weed Control Plan, prior to ground disturbance according to control methods detailed below and best management practices for invasive weed populations.

- **Weed control measures.** Weed control treatments may include permitted manual, mechanical, and herbicide methods. Any application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a Pest Control Advisor (PCA), and implemented by a Licensed Qualified Applicator. Herbicides shall not be applied during or within 72 hours of a scheduled rain event. Where manual and/or mechanical methods are used, disposal of the plant debris will take place at an appropriate offsite location. Herbicides shall not be used within Ephemeral Drainages, Stock Ponds, or Ephemeral Pools without approval of the County of San Benito and if necessary, the USFWS, and only water-safe herbicides shall be used in these locations. Herbicides shall not be applied when wind velocities exceed 6 mph. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated. Where manual and/or mechanical methods are used, disposal of the plant debris shall follow the regulations set by the County of San Benito.

  The timing of weed control treatments shall be determined for each plant species with the goal of controlling populations before they start producing seeds. Consultation with a County-approved, qualified biologist shall be required prior to weed control treatments with the intent of avoiding any adverse impacts to plants and wildlife in the area.

  Before and during construction of the project, measures to control the introduction and spread of noxious weeds in the project work area shall be taken as follows:

- **Monitor and treat weed infestations.** From the time ground disturbance through operation of the project, surveying for new invasive weed populations and the monitoring of identified and treated populations shall be required at all sites impacted by construction (array structures, staging areas, etc.), including access roads disturbed during the project. Surveying and monitoring for weed infestations shall occur annually. Treatment of all identified target species, as described in the approved Weed Control Plan, ~~weed populations~~ shall occur at a minimum of once annually. When no new seedlings or re-sprouts are observed at treated sites for three consecutive,

normal rainfall years, the weed population can be considered eradicated and weed control efforts may cease for that impact site.

Weed control efforts shall be timed annually to reduce noxious weed seed production, by conducting activities when flowering has just started, but before seeds have been produced. All plant debris shall be disposed of at an approved location. Weed control efforts shall commence in early spring (February), as indicated annually by a qualified restoration ecologist or biologist.

- **Use certified weed-free construction materials.** During project pre-construction and construction, all seeds and straw materials shall be weed-free rice straw, and all gravel and fill material shall be certified weed free by the County Agriculture Commissioners' Office. Any deviation from this will be approved by the County of San Benito. All plant materials used during restoration shall be native, certified weed-free, and approved by the County.
- **Wash vehicles and equipment.** During project pre-construction and construction, all construction vehicles will be visually inspected before arrival onsite. Vehicles and equipment will be free of excess dirt or mud prior to access to the site. If vehicles or equipment contain dirt or mud, proper washing will take place in designated areas prior to access onsite. A log shall be kept describing vehicle or equipment washed, methods, and name of washer. This log will be kept onsite and made available upon the request of the County. PVS will follow the developed Weed Control Plan to effectively prevent infestation, eradicate specific populations of invasive plant species in certain project areas, and suppression of existing populations of invasive plant species. Vehicles and equipment will be washed before exiting the site on an "as needed" basis, determined by the accumulation of dirt and mud after inspection by a Biological Monitor. ~~and equipment shall be washed (including wheels, undercarriages, and bumpers) before and after entering the project area. Vehicles shall be cleaned at existing construction yards or legally operating car washes. The Applicant shall document that all vehicles have been washed prior to commencing project work. Personal commute vehicles or delivery vehicles entering the site do not have to be washed if restricted to a single designated area, where weeds inadvertently imported to the site can be identified and contained.~~
- In addition, tools such as chainsaws, hand clippers, pruners, etc. shall be washed before and after entering all Project work areas. All washing shall take place where rinse water is collected and disposed of in either a sanitary sewer or landfill, unless otherwise approved by the County of San Benito. A written daily log shall be kept for all vehicle/equipment/tool washing that states the date, time, location, type of equipment washed, methods used, and staff present. The log shall include the signature of a responsible staff member. Logs shall be available to the County for inspection at any time and shall be submitted to the County on a monthly basis.
- **Weed clearing and disposal.** During project operation and maintenance activities, weeds in assembly yards, array footprints, access roads, staging areas, and any other disturbance areas shall be cleared and disposed of in an approved method.

The above measures shall be implemented by the Applicant as specified in the County Approved Weed Control Plan. ~~An environmental monitor shall be retained to ensure the compliance with construction measures.~~

Milestones: Prior to the issuance of a grading permit the County must approve the Weed Control Plan which will be developed in consultation with the CDFW.

Monitoring: An environmental monitor shall be retained to ensure the compliance with measures set forth in the Weed Control Plan.

MM BR-3.1 Proposed Changes

The very minor revision to this mitigation measure provides a time range for appropriate blooming periods for surveys for special-status plants. This change would not increase impacts.

MM BR-3.1 **Conduct pre-construction surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and implement avoidance measures.** Prior to initial ground disturbance and for undisturbed areas in subsequent construction years, the Applicant shall conduct pre-construction surveys for State and federally listed Threatened and Endangered, Proposed, Petitioned, and Candidate plants in all areas subject to ground-disturbing activity, including, but not limited to, solar panel footing preparation and construction areas, assembly yards, and areas subject to grading for new access roads. The surveys shall be conducted during the appropriate blooming period(s) (February 1 – May 31) by a qualified plant ecologist/biologist according to protocols established by the USFWS, CDFW, and California Native Plant Society (CNPS). All listed plant species found shall be marked and avoided. Any populations of special-status plants found during surveys will be fully described, mapped, and a CNPS Field Survey Form or written equivalent shall be prepared.

Surveys of reference populations shall be conducted along with surveys on the project site to document that precipitation conditions would not have adversely affected the ability to detect the species. If a listed plant species cannot be avoided, consultation with USFWS and CDFW will occur.

Prior to site grading, any populations of listed plant species identified during the surveys shall be protected by a buffer zone. The buffer zone shall be established around these areas and shall be of sufficient size to eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including human trampling, erosion, and dust. The size of the buffer depends upon the proposed use of the immediately adjacent lands, and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, physical and chemical characteristics of soils) that are identified by a qualified plant ecologist and/or botanist. The buffer for herbaceous and shrub species shall be, at minimum, 50 feet from the perimeter of the population or the individual. A smaller buffer may be established, provided there are adequate measures in place to avoid the take of the species, with the approval of the USFWS, CDFW, and County of San Benito. If impacts to listed plants are determined to be unavoidable, the USFWS shall be consulted for authorization. Additional mitigation measures to protect or restore listed plant species or their habitat may be required by the USFWS before impacts are authorized, whichever is appropriate.

Milestones: Surveys will be conducted prior to initial ground disturbance and for undisturbed areas during each subsequent construction year.

Monitoring: The environmental monitor will document when yearly survey events occur, review the resulting data and update the WEEP (MM BR-1.1) if impacts to species not previously addressed are anticipated.

MM BR-6.1 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because revisions provide additional detail related to the dates of the breeding season and references to consistency of the measure with the Eagle Conservation Plan. The overall the effect of the measure was not altered**.**

MM BR-6.1 **Conduct pre-construction surveys for nesting and breeding birds and implementation of avoidance measures.** Prior to any on-site site disturbance (i.e., mobilization, staging, grading or construction) during the breeding season (February 1 through August 15) for any birds that could occur on the site, the Applicant shall retain a County-approved qualified biologist to conduct pre-construction surveys for nesting birds. The qualified biologist must be trained and able to hear grasshopper sparrows. Surveys for nesting birds shall be conducted within the recognized breeding season in all areas within 500 feet of solar arrays, staging areas, substation sites, and access road locations. Surveys for raptors shall be conducted for all areas between February 1 and August 15. The required survey dates may be modified based on local conditions, as determined by the County-approved, qualified biologist, with the approval of the County of San Benito.

If breeding birds with active nests are found prior to or during construction, a biological monitor shall establish a 300-foot buffer around the nest for ground-based construction activities and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails.

If nesting golden eagles are identified, a 0.5-mile no activity buffer will be implemented in accordance with the Eagle Conservation Plan (subject to approval by the USFWS and CDFW). Should condors be found roosting within 0.5 miles of the construction area, no construction activity shall occur between 1 hour before sunset to 1 hour after sunrise, or until the condors leave the area. Should condors be found nesting within 1.5 miles of the construction area, no construction activity will occur until further authorization from the USFWS. All California condor sightings in the project area will be reported directly to the USFWS by the County qualified biologist in accordance with Avian Conservation Strategy (subject to approval by the USFWS and CDFW).

The prescribed buffers may be adjusted to reflect existing conditions including ambient noise, topography, and disturbance with the approval of the County as appropriate. The biological monitor(s) shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The biological monitor(s) shall be responsible for documenting the results of the surveys and ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the respective agencies.

If for any reason an active bird nest must be removed during the nesting season, the Applicant shall provide written documentation providing concurrence from the USFWS and CDFW authorizing the nest relocation. Additionally the Applicant shall provide a written report documenting the relocation efforts. The report shall include what actions were taken to avoid moving the nest, the location of the nest, what species is being relocated, the number and condition of the eggs taken from the nest, the location of where the eggs are incubated, the survival rate, the location of the nests where the chicks are relocated, and whether the birds were accepted by the adopted parent.

Surveys shall be conducted to include all structural components of the solar arrays and related structures as well as all construction equipment. If birds are found to be nesting in facility structures, buffers as described above shall be implemented. If birds are found to be nesting in construction equipment, that equipment shall not be used until the young have fledged the nest or, if no young are present, until after the breeding season has passed.

If trees or existing poles/towers are to be removed as part of project related construction activities they will be done so outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season can't be avoided then trees and existing poles/towers the biological monitor must confirm that the nest is vacant prior to its removal. If nests are found within these structures and contain eggs or young the biological monitor shall allow no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors until the young have fledged the nest.

Milestones: Prior to the commencement of construction activities pre-construction nesting surveys will be conducted; during the recognized breeding season for most birds biological monitors will routinely inspect for active nests.

Monitoring: The environmental monitor will need to conduct routine checks of nests during the known breeding season and, if young are present, monitor until young have fledged.

MM BR-8.1 Proposed Changes

The removal of this measure would not create a new biological impact or substantially increase the severity of a biological impact to vernal pool fairy shrimp. Full protocol surveys have been completed for the Revised Project in accordance with this measure and the positive results of the surveys have been incorporated into the analysis of the Supplemental EIR (See Impact BR-8).

~~**MM BR-8.1 Complete full protocol level surveys of ephemeral pools.** The Applicant shall complete a second season of vernal pool fairy shrimp surveys for the 128 ephemeral pools on the project site, in accordance with the USFWS protocol. For those ephemeral pools where vernal pool fairy shrimp were not found during the first and second surveys, no further mitigation measures are necessary.~~

~~**Milestones:** Surveys will be conducted in accordance with the USFWS protocol. The results of these surveys shall be provided to the County within 90 days of completion.~~

~~**Monitoring:** None required.~~

MM BR-9.1 Proposed Changes

This change clarifies the nature of construction activities that would be restricted to daylight hours. This change would not create a new biological impact or substantially increase the severity of a biological impact.

MM BR-9.1 Conduct pre-construction surveys for California tiger salamander and implement avoidance measures. The Applicant shall perform pre-construction California tiger salamander surveys (see Interim Guidance on Site Assessment and Field Surveys for Determining Presence of a Negative Finding of the California Tiger Salamander (CDFG October 2003) for guidelines on survey techniques, limitations, and inference limits) prior to the construction of all project phases in areas within the project boundary

fenceline of suitable aestivation or breeding habitat within 1.2 miles of known or potential breeding ponds. Avoidance measures for California tiger salamander shall include those outlined in MM BR-G.2 (Implement Best Management Practices). The following measures shall also be required:

Work shall be restricted to daylight hours or non-rain nighttime hours. During the site construction phases, grading and ~~construction~~ subsurface disturbing activities, including pile driving on the project site, after dusk shall be prohibited unless coordinated through the County. If such activity is necessary, it should be conducted during nights without precipitation. If activity after dusk on a day with precipitation is still necessary, then one or more on-site qualified, County-approved biologists shall monitor these activities to ensure California tiger salamanders that may be active above ground are avoided.

Inspect pipes and similar structures. All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for California tiger salamanders before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a California tiger salamander is discovered inside or underneath a pipe, the salamander shall be removed by a qualified, County-approved biologist and placed in a mammal burrow in a designated safe area away from construction activities.

Avoid disturbance to all ponds and in-stream pools. All ponds and in-stream pools on the project site may provide potential breeding habitat for California tiger salamanders. All ponds and in-stream pools on the project site shall be avoided unless they are completely dry. They should be avoided to the maximum extent possible to allow resident California tiger salamanders to continue using them after construction has ended.

Translocate individual California tiger salamanders. Should individual California tiger salamanders be observed within the construction zone either during pre-construction surveys or during construction, a qualified biologist, as identified by the USFWS and CDFW, shall move the animal out of harm's way and place the animal at the mouth of the closest protected burrow.

Creation of new breeding habitat. The Applicant shall create new ponds on appropriate mitigation lands to offset any potential impacts to known or potential breeding habitat located on the project site (e.g., two ponds in Section 4 that historically supported CTS breeding plus any other ponds within the approved project fenceline that are shown, after survey efforts, to support breeding) which will be subject to approval from the USFWS and CDFW. The size of the mitigation ponds shall be equal to those ponds impacted either directly or indirectly by the project.

MM BR-10.1 Proposed Changes

A full protocol survey for the blunt-nosed leopard lizard has been completed for the Project. The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions provide an update to the language of the measure based on updated survey data provided by the Applicant and consistency with the Blunt-nosed Leopard Lizard Avoidance Plan subject to USFWS approval and issuance of a 2081/2099 take permit by CDFW. The overall the effect of the measure to reduce impacts was not altered.

MM BR-10.1 Conduct pre-construction surveys for blunt-nosed leopard lizard and implement avoidance measures. The Applicant shall perform ~~blunt-nosed leopard lizard surveys~~

preconstruction surveys ~~in accordance with the CDFW protocols (CDFG, 2004)~~ prior to all construction activities that will result in permanent or temporary ground disturbance within 30 days prior to ~~of~~ construction ~~the construction of all project phases starting with Phase 2 (Phase 1 construction will be based on protocol surveys conducted in 2010)~~ for the entire construction footprint of the project phase plus a 1,500-foot-wide buffer around the construction footprint, as long as the Applicant has authorization from adjacent land owners to do so, if applicable. ~~In addition, an additional pre-construction survey will be conducted immediately prior to the onset of construction.~~ A County-approved, qualified biologist shall record the geographic coordinates of each blunt-nosed leopard lizard individual detected on, and within 1,500 feet of, the construction footprint of the project site (including offsite parcels where access is granted).

Implementation of avoidance measures will be described in detail in an approved BNLL Avoidance Plan. The final measures will be approved by USFWS ~~and CDFW~~ and will include the following ~~measures~~.

Buffers. The point location data shall be used to delineate buffers designed to encompass a 52.4 acre home range of each individual leopard lizard. A buffer would minimize the risk of direct or indirect take of blunt-nosed leopard lizard individuals in conjunction with avoidance and exclusion criteria as described below. A buffer of any size does not guarantee that take will not occur but provides a high degree of certainty that each individual leopard lizard will be adequately protected. All observed BNLL shall be avoided by a flagged 52.4-acre buffer ~~Each buffer shall cover an area of at least 22 acres,~~ as described in the BNLL Avoidance Plan ~~which is the approximate size of the largest blunt-nosed leopard lizard home range size computed by Warrick et al. (1998), and which is greater than 3 standard deviations from the mean (which accounts for 99.7% of the sample population, assuming the distribution is normal) of the home range data set compiled by Dr. Germano in unpublished data provided to the EIR preparers. Each 22 acre buffer shall be delineated by the biologist using the recorded point location as the approximate center of the buffer area. Using habitat modeling based on the current knowledge base of the most important blunt-nosed leopard lizard habitat parameters, the final boundaries of the buffers shall be determined by the qualified biologist to encompass the 22-acre area of greatest habitat suitability~~.

Avoidance. No construction activities or construction-related vehicular traffic shall be allowed within the identified buffers, and all movement corridors shall be delineated with fencing and signage identifying the buffers as off-limits to construction personnel. The fencing around the buffers shall be elevated ~~24~~ 5-6 inches off the ground surface to allow the passage of San Joaquin kit fox and other small mammals through the area. The ~~unless the~~ Designated Biologist or Biological Monitor may also recommend additional protection measures around work areas (see **Exclusion**, below). ~~.~~ All fencing will be actively maintained and repaired as directed by biological monitors and removed upon completion of that portion of project construction.

Exclusion. All construction work and equipment use ~~(except for driving)~~ shall occur within areas that a Designated Biologist or Biological Monitor(s) has completed a pre-construction survey within 30 days of the activity. Construction work and equipment use will be limited to areas in which a Biological Monitor is able to actively monitor for changes to site conditions and the presence of protected species. Based on the

discretion of the Designated Biologist or Biological Monitor, additional protection measures such as exclusion fencing may be used around work areas ~~exclusion zones of no greater than 100 acres in extent. Multiple 100-acre exclusion zones are allowed, but shall not exceed 613 acres in total extent at any one time.~~. If exclusion fencing is ~~required~~ recommended, exclusion fencing for blunt-nosed leopard lizard shall be installed under the supervision of a qualified biologist in accordance with Mitigation Measure BR-G.4 (Implement Biological Construction Monitoring). If a blunt-nosed leopard lizard is found within ~~an exclusion~~ work area ~~zone~~, all work in the ~~exclusion zone~~ portion of the work area as deemed necessary by the Designated Biologist shall cease~~, and the implementation~~ until the measures below ~~shall be followed~~ are implemented. Exclusion fencing shall be uninstalled upon conclusion of construction in each ~~exclusion zone~~ work area adjacent to the blunt-nosed leopard lizard exclusion zone.

Implement protective procedures if a blunt-nosed leopard lizard is detected on the project site. If a blunt-nosed leopard lizard (live or dead) is discovered on the site by a biological monitor or anyone else, the following protocol shall be implemented:

- The project supervisors and biological monitor shall be immediately notified.
- In the case of a live blunt-nosed leopard lizard, the Designated Biologist shall order the cessation of all work activities within ~~54.2 acres 1000 feet~~ a buffer that will be determined at their discretion such that "take" of blunt-nosed leopard lizard is avoided. ~~of the location in which the lizard was observed shall immediately cease to ensure that no lizard is impacted by construction activities, and t~~ The following measures shall be implemented:

  1. ~~The~~ At the direction of ~~biological monitor or other qualified biologist~~ the Designated Biologist, an ~~shall stake and flag an~~ exclusion zone ~~of~~ shall be marked by stakes and flagging ~~1000 feet~~ 54.252.4 acres around the location in which the blunt-nosed leopard lizard was observed to protect the blunt-nosed leopard lizard from construction activities. To further protect the blunt-nosed leopard lizard, temporary exclusion fencing may be installed per "**Exclusion**", above.
  2. The ~~biological monitor~~ Designated Biologist shall immediately notify the USFWS and CDFW via telephone or electronic mail when a blunt-nosed leopard lizard is encountered that may be in harm's way.
  3. Subject to the approval of USFWS and CDFW, the Designated Biologist shall identify the appropriate ongoing avoidance measures that will result in avoiding "take" of the observed blunt-nosed leopard lizard.

In the case that a blunt-nosed leopard lizard is killed or injured as a result of project related activities, all work activities within the project site shall immediately cease in order to ensure that no additional lizards are impacted by construction activities, and the biological monitor shall immediately notify the USFWS and CDFW via telephone or electronic mail. Work shall not resume until approved by both agencies and any other mitigation measures recommended by the agencies have been fully implemented.

Areas known to be occupied by blunt-nosed leopard lizards and all areas where protocol-level surveys have not been completed shall be completely avoided. All areas known to be occupied by blunt-nosed leopard lizards (i.e., the buffers and corridors established during the implementation of MM BR-10.3 and 10.4) and areas in which

protocol-level surveys for the species have not been conducted shall be completely avoided during construction.

Establish movement corridors to allow movement of isolated blunt-nosed leopard lizards to and from areas of greater population density. Buffer areas established for isolated individuals discovered in the uplands of the project site, shall be connected with suitable movement corridors that link isolated buffers either to occupied or suitable habitat located off the project site. This connection may include ephemeral washes/ drainages or to other movement corridors providing such linkage. Movement corridors must be at least 100 feet wide, and construction activities or vehicular traffic shall be prohibited in these areas. All movement corridors shall be delineated with fencing and signage identifying each corridor as off limits to construction personnel. The fencing shall be elevated to allow the passage of San Joaquin kit fox and small mammals. All fencing shall be actively maintained and repaired as directed by biological monitors and removed upon completion of the project.

Avoid use of plastic monofilament netting. Tightly woven fiber netting or similar material shall not be used for erosion control or other purposes at the project site to ensure that blunt-nosed leopard lizards do not become entangled or trapped. This limitation shall be communicated to all contractors through use of Special Provisions included in the bid solicitation package.

MM BR-11.1 Proposed Changes

Proposed removal of MM 11.1. The removal of this measure would not create a new biological impact or substantially increase the severity of a biological impact. Based on the reduction of the project footprint and the preservation of conservation lands that are known to provide occupied habitat of equal or greater quality for mountain plover, a mitigation ratio of 1:1 can be met without the need for additional surveys for mountain plover pursuant to Mitigation Measure BR-11.1. Therefore, this measure can be removed, and the preparation of an acceptable Avian Protection Plan and the implementation of Mitigation Measures BR-G.1 through BR-G.6 will reduce impacts to mountain plovers to less than significant levels.

MM BR-11.1 ~~**Conduct pre-construction surveys for wintering mountain plovers.** The Applicant shall retain a qualified, County-approved biologist to conduct weekly surveys for wintering mountain plovers in areas proposed for ground disturbance during the entire wintering season (as determined in consultation with California Department of Fish and Game and U.S. Fish and Wildlife Service) prior to ground-disturbing activities. Habitat suitability and occupancy data will be used to determine whether proposed mitigation lands for biological resources meet the requirements for mountain plover mitigation as outlined in Mitigation Measure BR-G.5.~~

MM BR-14.2 Proposed Changes

Proposed change to MM BIO-14.2. The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions simply note that potential design changes will be based on post-construction monitoring data collected per the Avian Conservation Strategy and in consultation with regulatory agencies. As presented in the 2010 Final EIR, MM BIO-14.2 noted that the Applicant may be required to install non-polarizing white borders and grids on or around the solar panels, or other measures found to be effective in minimizing avian mortality. The USFWS recognizes the lack of data on both the effectiveness of these measures and the

causative factors resulting in migratory bird mortality, and has provided guidance on monitoring migratory bird mortalities at solar facilities (Nicolai et al. 2011). Proposed changes to this measure serve to align the requirements with current standard solar project monitoring objectives under development by the Large Solar Association and USFWS that include: (1) Estimating the overall annual avian mortality rate associated with the facility; (2) Determining the species impacted at the facility; and (3) Determining whether there is spatial differentiation within the solar field.

MM BR-14.2 **Prepare and Implement an Avian Conservation Strategy and Eagle Conservation Plan ~~Bird Monitoring and Avoidance Plan~~.** Prior to the issuance of a construction permit, the Avian Conservation Strategy and Eagle Conservation Plans (which have been prepared by the Applicant in draft format) ~~shall retain a~~ shall be reviewed and approved by the County. The final plans will be developed in consultation ~~approved, qualified biologist to prepare a Bird Monitoring and Avoidance Plan in consultation~~ with California Department of Fish and ~~Game~~ Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS). ~~This~~ These plans have been prepared in general accordance with the USFWS Land-based Wind Energy Guidelines (USFWS 2012), Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy Version 2 Guidance (USFWS 2013) and with information provided in the ~~shall follow the~~ Avian Protection Plan guidelines outlined by ~~USFWS and~~ APLIC~~.~~ (2005).

The details of the final plans are subject to the approval and conditions required by the wildlife agencies. The plan will require monitoring of (1) the death and injury of birds from collisions with facility features such feeder/distribution lines and solar panels, and ~~evaporation pond and~~ (2) impacts to aquatic insects from polarized light from solar panels that may affect insectivorous (insect-eating) birds. The study designs shall be approved by the County of San Benito in consultation with the ~~California Department of Fish and Game~~ CDFW and/or the ~~U.S. Fish and Wildlife Service~~ USFWS.

Bird mortality study. The bird mortality component of the Avian Conservation Strategy ~~Bird Monitoring Study~~ shall include at a minimum: detailed specifications on data, a carcass collection protocol, and a rationale justifying the proposed schedule of carcass searches. The study shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.

Polarized light and insectivorous birds study. The study of polarized light impacts on insectivorous birds shall include at a minimum: detailed specifications regarding data requirements, including protocols for collection and identification of insect eggs found on solar panels and a rationale for a data collection schedule.

During construction and for one year following the beginning of the solar farm operation the biologist shall submit annual reports to the County describing the dates, durations, and results of monitoring and data collection. The annual reports shall provide a detailed description of any project-related bird or wildlife deaths or injuries detected during the monitoring study or at any other time and data collected for the study of polarized light impacts on insectivorous birds. The report shall analyze any project-related bird fatalities or injuries detected, and provides recommendations (in consultation with the County) for future monitoring and any adaptive management actions needed.

Thresholds. Thresholds will be determined by the County in consultation with CDFW and/or USFWS. If the County determines that either (1) bird mortality caused by solar facilities is substantial and is having potentially adverse impacts on special-status bird

populations, or that (2) the attraction of polarized light from solar panels is causing reproductive failure of aquatic insect populations at high enough levels to adversely affect insectivorous special-status birds, the Applicant shall be required to implement some or all of the mitigation measures below~~:~~.

Implementation Measures. To minimize bird mortality caused by solar facilities, the Applicant may be required to install additional bird flight diverters alterations to project components that have been identified as key mortality features, or implement other appropriate actions approved by the County and regulatory agencies based on the findings of the Avian Conservation Strategy and Eagle Conservation Plan. ~~Bird Monitoring and Avoidance Plan. To minimize indirect impacts of polarized light on insectivorous birds, the Applicant may be required to install non-polarizing white borders and grids on or around solar panels, which Horvath et al. (2010) found to dramatically reduce the attractiveness of solar panels to aquatic insects, or other measures that are shown to be effective.~~

If mitigation actions are required, the annual reporting shall continue until the County, in consultation with CDFW and USFWS, determines whether more years of monitoring are needed, and whether additional mitigation and adaptive management measures are necessary. After the Avian Conservation Strategy and Eagle Conservation Plan ~~mortality monitoring study Bird Monitoring Study~~ is determined by the County to be complete, the Applicant shall prepare papers that describe the design and monitoring results of the two studies to be submitted to peer-reviewed scientific journals. Proof of submittal shall be provided to the County, CDFW and USFWS within one year of concluding the monitoring studies.

Milestones: The Avian Conservation Strategy and Eagle Conservation ~~Strategy~~ Plans ~~Bird Monitoring and Avoidance Plan~~ shall be submitted to the County prior to ~~the issuance of a construction permit~~ the start of construction. The County will consult with CDFW and/or USFWS on the proposed program prior to approval.

Monitoring: Qualified biologist to monitor impacts to birds during construction and for one year after completion of construction.

MM BR-16.1 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are based on minor editorial changes, updated survey data, and/or additional protective measures provided by the Applicant. The overall effect of the measure to reduce impacts was not altered.

MM BR-16.1 **Conduct focused pre-construction giant kangaroo rat burrow/precinct surveys and avoid.** No more than 30 days prior to commencement of ground disturbing activities the Applicant shall retain a County-approved, qualified biologist to conduct pre-construction surveys for each phase of the project. If active giant kangaroo rat burrows/precincts are present, they shall be flagged, and ground-disturbing activities shall not occur within 50 feet of each active burrow/precinct. The setback shall be marked in the field to be easily visible by all construction personnel. The biological monitor shall periodically field check the mapped burrows/precincts to ensure that buffer delineation and flagging are all in good working order. All active burrows/precincts shall be mapped and incorporated into a GIS based figure for use by the on-site monitors and construction crews. Figures shall

include each mapped burrow/precinct and buffer utilizing a highly visible method easily identifiable by construction workers and monitors in the field.

If avoidance is not possible, the Applicant and qualified biologist will take the following sequential steps when working in such areas:

1. Giant kangaroo rats present in impact areas shall be live trapped and relocated to suitable habitat, as described in an approved Giant Kangaroo Rat Relocation Plan (described below). The Final Giant Kangaroo Rat Relocation Plan will be developed in coordination with wildlife agencies (USFWS and CDFW). If the disturbance is temporary (< 1 day) trapped individuals may be held under suitable conditions, during the period of disturbance, and then released at the same location at which they were trapped. Other suitable locations include unoccupied burrow precincts within the habitat corridors (see MM BR-16.3) or on the mitigation lands. At least 30 days before the start of construction, a Giant Kangaroo Rat Relocation Plan ~~trapping plan~~ shall be submitted to the County for approval. The plan shall include but not be limited to the following: the methods for capturing animals; the procedures for evaluating health of the animals; the location and methods for storing live animals; the methods for soft release (i.e., fencing); radio tagging; monitoring for survivorship; and remedial actions for injured or lost animals. The Giant Kangaroo Rat Relocation Plan would generally include these components; however the details of the final plan will be subject to the approval and conditions set forth by wildlife agencies.
2. Methods shall be taken to prevent entry to the burrow (e.g., one way doors) by giant kangaroo rat and other small mammal species until construction is complete in these areas.
3. Once construction activities are complete access to the burrows shall be restored where possible. If construction-related impacts would result in the crushing or destruction of a burrow then the burrow shall be excavated (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more than 4 inches at a time, or as described in the wildlife agency-approved Giant Kangaroo Rat Relocation Plan). If giant kangaroo rat burrows/precincts must be trapped ~~shall not be disturbed~~ from January through June (recognized breeding/mating season), the Giant Kangaroo Rat Relocation Plan includes protocol to be followed if a lactating female giant kangaroo rat or young are encountered ~~unless a qualified biologist, utilizing video technology, verifies that no young are present in the burrow.~~

If exclusion fencing for giant kangaroo rat is deemed necessary by the County's biological monitor, fencing shall be installed in accordance with Mitigation Measure BR-G.4 (Implement Biological Construction Monitoring).

The Applicant shall document all giant kangaroo rat burrows/precincts abandoned or destroyed and provide a written report to the County of San Benito prior to final County inspection that allows operation of each project phase.

Milestones: Prior to the commencement of construction activities, pre-construction surveys shall be completed. Prior to the final County inspection that allows operation ~~, of each project phase~~, the final report (as detailed above) ~~, detailed above,~~ shall be submitted to the County.

Monitoring: On-site biological monitor will periodically survey for potential burrows and implementation of ~~/~~the above avoidance measures.

MM BR-16.3 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are based on minor editorial changes, references to completed survey data and plans, and the revised project construction schedule. The overall effect of the measure to reduce impacts was not altered.

MM BR-16.3 **Preserve, manage, and maintain giant kangaroo rat habitat corridors across the project footprint.** In order to preserve, manage, and maintain the ongoing functionality of the proposed giant kangaroo rat corridors (habitat corridors) on the ~~project site~~ Valley Floor Conservation Lands, the Applicant shall implement the following measures:

1. To ensure the ongoing functionality of the habitat corridors, the habitat corridors shall satisfy the following requirements:

    a. The habitat corridors need not be of uniform width but at no point shall a corridor width be less than 100 feet on either side of the incised channel, or more than 100 feet from the ordinary high water mark where no incised channel is evident.

    b. A minimum of 50 active precincts shall occur within the habitat corridor at the time of corridor designation, and they shall be distributed throughout the length of the corridor to ensure connectivity.

    c. Habitat corridors shall conform to contours of natural ecological features in the landscape in which the ecological requirements of the species are the foremost consideration.

    d. Habitat corridors shall be fenced with 3-strand barbed wire. Fence locations shall be revised from those defined in the Final EIR for the proposed project and alternatives to be a maximum of 25 feet from edges of all panel installations.

    e. Project design shall incorporate road designation that avoids roads adjacent to the corridors (i.e., there shall be no driving on the side of any panel block adjacent to a designated habitat corridor).

2. New construction of buildings, ornamental tree plantings, or other features not already identified in the Final EIR that would reduce available habitat and may provide perching opportunities for predatory birds shall not be permitted within or directly adjacent to the habitat corridors.

3. ~~At the completion of Phase 1 and each subsequent phase, the Applicant shall retain a qualified biologist to monitor the corridors to ensure the corridor requirements set forth in section 1 continue to be maintained. If the biologist determines that giant kangaroo rats occupy areas up to the edge of designated habitat corridors or under panel arrays, then the habitat corridor requirements shall be considered satisfied. However, if after construction monitoring of Phases 1, 2, 3, and/or 4, the biologist determines that giant kangaroo rats do not occupy up to the edge of the corridors or under panel arrays due to non-weather related factors, the habitat corridor adjacent to the next phase shall be re-evaluated in consultation with the~~

~~USFWS and CDFW and adaptive management measures shall be implemented to ensure the requirements of the corridor continue to be met during the life of the project. These adaptive management measures may include, but not be limited to, adjustments to the width of the corridor adjacent to the next construction phase, enhancement of habitat areas within the corridor, relocation of GKR detected as part of the pre-construction survey for the following into a suitable location within the habitat area, or other similar measures to ensure the ongoing functionality of the corridors. Any adaptive management measures that are required adjustments to the boundary of the corridors shall apply to future construction activities and not previously constructed phases or structures.~~

43. Prior to commencement of construction, habitat corridors shall be placed under a biological conservation easement to be preserved in perpetuity pursuant to Mitigation Measure BR-G.5, subject to the following restriction: driving or road building shall be prohibited across habitat corridors except where this provision conflict with the emergency access requirements of the CAL FIRE/San Benito County Fire Department.

Milestones: Conservation easement on habitat corridors shall be recorded prior to commencement of construction.

Monitoring: Construction monitoring shall occur <u>for the duration of construction</u> ~~at the end of Phases 1, 2, 3, and 4,~~ and if the biologist determines that the corridors are not functional, adaptive management measures shall be implemented in consultation with USFWS and CDFW.

MM BR-17.1 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are based on minor editorial changes, updated survey data, and/or additional protective measures provided by the Applicant. The overall the effect of the measure to reduce impacts was not altered.

MM BR-17.1 Conduct pre-construction San Joaquin antelope squirrel surveys and implement avoidance measures. No more than 30 days prior to the commencement of ground disturbance activities the Applicant shall retain a County-approved, qualified biologist to conduct pre-construction surveys for each phase of the project. If present, active San Joaquin antelope squirrel burrows shall be flagged and ground-disturbing activities shall be avoided within a minimum of 50 feet surrounding each active burrow. If avoidance is not possible, the Applicant shall take the following sequential steps when working in such areas:

1. Allow for one night without disturbance to the burrow and surrounding area to allow the antelope squirrels to vacate the burrow
2. Antelope squirrels shall be live trapped and relocated out of impacted areas ~~in the same manner as described under MM BR-16.1 for giant kangaroo rat~~ <u>as described in a the San Joaquin Antelope Squirrel Relocation Plan. The Final San Joaquin Antelope Squirrel Relocation Plan shall be developed in coordination with wildlife agencies (USFWS and CDFW) and details of the plan will be subject to final agency authorization and conditions of approval.</u>

3. Methods shall be taken to prevent reentry to the burrow by antelope squirrels (and other small mammal species) until construction is complete in these areas.

4. Once construction activities are complete access to the burrows shall be restored. If construction-related impacts would result in the crushing or destruction of a burrow then the burrow shall be excavated (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more than 4 inches at a time) or as specified in the agency-approved San Joaquin Antelope Squirrel Relocation Plan.

5. Antelope squirrel burrows shall not be disturbed from January to May (recognized breeding/mating season) unless a qualified biologist, utilizing video technology, verifies that no young are present in the burrow, or except following methods detailed in the agency-approved Antelope Squirrel Relocation Plan.

The Applicant shall document all San Joaquin antelope squirrel burrows abandoned or destroyed and, prior to final County inspection, provide a written report to the County of San Benito, CDFW and USFWS.

Milestones: Prior to the commencement of construction activities, pre-construction shall be completed. Prior to the final County inspection the final report, detailed above, shall be submitted to the County, CDFW and USFWS.

Monitoring: On-site biological monitor will periodically survey for potential burrows requiring the above avoidance measures.

MM BR-19.1 Proposed Changes

The minor language changes would not create a new biological impact or substantially increase the severity of a biological impact because the revisions are based on minor editorial changes, updated survey data, and/or additional protective measures provided by the Applicant. Additional revisions to this measure seek to summarize the detailed measures presented in the San Joaquin Kit Fox Conservation Measures to be implemented by the Applicant (Available on the Panoche Valley Solar Project page, accessed from the County's website home page: www.cosb.us/). The overall effect of the measure to reduce impacts was not altered.

MM BR-19.1 **Conduct focused pre-construction San Joaquin kit fox surveys and implementation of avoidance measures,** as detailed in the San Joaquin kit fox Conservation Measures document for the project. The San Joaquin kit fox– Conservations Measures document shall be developed and implemented in coordination with the wildlife agencies (USFWS and CDFW). Though final details of the Conservation Measures will be subject to the approval authority of the wildlife agencies, typical measures include the following: Pre-construction surveys conducted by a County-qualified and USFWS approved biologist (no more than 30 days prior to construction), avoidance of ground disturbing activities around active dens (with a buffer to be determined by the qualified biologist, typically 100-feet), flagging to identify den locations and buffer areas, and regular monitoring by the qualified biological monitor during construction. ~~No~~ more than 30 days prior to commencement of construction activities the Applicant shall retain a County-qualified and USFWS approved biologist to conduct pre-construction surveys for each phase (construction of each solar array) of the project. If determined to be active, San Joaquin kit fox dens will be fenced and ground-disturbing activities shall be avoided within a minimum of 100 feet surrounding e ach active den. Fencing shall encircle each den at the appropriate buffer distance and should not prevent access to the den by San

Joaquin kit fox. Construction activities may occur in the area once it has been determined the fox has moved out of the construction area. A typical dens will require a 100-foot buffer demarcated by flagging. The flagging shall consist of 4 to 5 flagged stakes 100 feet from the den entrance(s) to sufficiently identify the den location. All on-site flagging and buffer delineations shall be kept in good working order for the duration of each construction phase. The biologist shall routinely monitor all dens flagged for protection to ensure they are not disturbed during the construction phase.

If occupied natal dens are found within 1,000 feet of project activities, ~~from September 1 through November,~~ the USFWS shall be contacted immediately, all project related activities within ~~the 1000-foot~~ a 200-foot radius shall stop until ~~the USFWS gives direction to resume activity. The buffer may be adjusted upon written approval from the USFWKatz & Associates CDFW and County. If occupied natal dens are encountered from December 1 to July 31 project activities within 0.3 miles of the dens will be prohibited~~ until the pups have left the den, and/or all measures detailed in the agency-approved SJKF Conservation Measures will be implemented. Avoidance of natal dens is mandatory.

Details of the SJFK Conservation Measures will be subject to the approval authority of the wildlife agencies. Typical measures are included below. The SJKF will implement equivalent measures in a similar manner, at the discretion of the wildlife agencies. If avoidance of potential or known dens is not possible, the Applicant shall take the following sequential steps (or as specified by the SJKF Conservation Measures approved by the wildlife agencies) when working in such areas:

1. Allow for three consecutive days of monitoring to determine the occupancy status of each den. Activity at the den shall be monitored by using tracking medium at the entrance to the den or stationary infrared beam cameras and by spotlighting. If no activity is observed actions described below under step 3 may be implemented. If kit fox activity is observed the den shall be monitored for an additional 5 days from the date of observance. Use of the den during this time can be discouraged by partially plugging its entrance(s) with soil in such a manner that any resident animal can escape easily. If kit fox are still present after 5 days, den excavation, discussed below under step 3 may proceed when, in the judgment of the qualified/approved biologist it is temporarily vacant.

2. Once the kit fox has vacated the den methods (e.g., one way doors) shall be taken to prevent reentry to the burrow by kit fox (and other mammal species) until construction is complete in these areas. Once construction activities are complete access to the burrows shall be restored

3. Once it has been confirmed that the dens have been vacated, if construction-related impacts would result in the crushing or destruction of a den then the den shall be excavated. Excavation shall be done only hand and under the direct supervision of the biologist, removing no more than 4 inches at a time or as specified in the agency-approved San Joaquin kit fox conservation measures. If at any time during excavation a San Joaquin kit fox is discovered inside the den all activity will cease immediately and monitoring described above under step 1 shall be resumed. As indicated above, natal dens shall not be disturbed at any time.

Collaring of individual SJKF, for location monitoring, may be used as an impact avoidance measure.

The biologist shall document all kit fox dens abandoned, destroyed or avoided/ protected. Prior to final County inspection or occupancy, whichever comes first, the biologist shall prepare a written compliance report for County review and approval.

Prior to the completion of construction in each phase of the project the Applicant shall replace all excavated kit fox dens with artificial dens on a 2:1 basis. The location and design of the artificial dens will be approved by the County prior to installation.

Additionally, upon completion of each phase of construction activities, escape dens shall be installed in areas between the arrays to facilitate movement of individuals through the project area as specified in the SJKV Conservation Measures. ~~a.~~ These dens will measure 8 inches across, be constructed of PVC pipe and be installed with rebar to restrict the opening to 6 inches to prevent use by badgers or coyotes. The 8-inch-diameter PVC pipe should be at least 25 feet long, placed flat on the ground surface and covered with soil for thermal protection. A minimum of one escape den per quarter mile shall be required. Locations of all escape dens shall be indicated on all constructions plans submitted with the construction permit package and be approved by the County prior to installation.

As required by the FEIR, lands permanently affected by the proposed Project will be mitigated at a 4:1 acreage ratio by conservation lands. This 4:1 ratio will be broken down into high and moderate suitability habitat. A 2:1 acreage ratio will consist of high suitability habitat, and another 2:1 acreage ratio will consist of moderately suitable habitat, as described in detail in the SJKF Conservation Measures.

Milestones: Prior to commencement of construction activities conduct pre-construction surveys. Prior to the final County inspection a review of compliance with measures and documentation of mitigation will be required.

Monitoring: Dens present on the current construction phase shall be monitored by the biological monitor during construction.

MM BR-22.1 Proposed Changes

The language changes would not create a new biological impact or substantially increase the severity of a biological impact because the evaporation pond is no longer a component of the Revised Project Design and the construction ponds are temporary in nature.

MM BR-22.1 **Fence ~~evaporation~~ temporary pond to exclude ~~keep~~ wildlife ~~out~~.** The perimeter of the temporary ponds shall be surrounded by a barrier fence designed to keep wildlife species out. The fence shall be tall enough (6 feet) to keep out large mammals and fine enough at the bottom, and buried at least 2 feet, to keep out amphibians, reptiles, birds, and small and medium sized mammals. ~~The project Applicant shall cover the evaporation ponds with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. The netted ponds shall be monitored on a regular basis for the life of the project to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife.~~ This mitigation measure will be effective because the barrier methods employed will reduce wildlife exposure.~~to trace~~

~~elements and high concentrations of salts.~~ The monitoring shall at a minimum include the following:

- A designated biologist ~~with experience in evaporation pond monitoring for avian impacts~~ shall regularly survey the ponds at least once per month starting with the first month of operation of the ~~evaporation~~ ponds. ~~The purpose of the surveys shall be to determine if the netted ponds are effective in excluding birds, and to determine if the nets pose an entrapment hazard to birds and wildlife. Operations staff at the project site shall also photograph, document, and report finding any dead birds at the evaporation ponds to the designated biologist within one day of discovering the carcass.~~ The designated biologist shall report any bird or other wildlife deaths ~~or entanglements~~ within two days of discovering the carcass to the CDFW and USFWS.

- ~~If shorebirds (e.g., black-necked stilt, American avocet, plover, killdeer) are present at or near the evaporation ponds during the nesting season (February 1 through July), the designated biologist shall conduct focused nest searches weekly for the duration of shorebird presence during the nesting season. If nesting is detected, which means the birds are feeding in the evaporation pond, eggs shall be collected and an egg selenium and morphological (evaluation for teratogenic effects) analysis conducted by an appropriately permitted biologist. Egg collection procedures and study design shall be developed in advance with CDFG and USFWS Contaminants Division.~~

- ~~If dead or entangled birds are detected, the designated biologist shall take immediate action to correct the source of mortality or entanglement, the designated biologist shall make efforts to contact and consult the CDFG and USFWS prior to taking remedial action, but the inability to reach these parties shall not delay taking action that would, in the judgment of the designated biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.~~

- ~~If after 12 consecutive monthly site visits no bird or wildlife deaths, deformities, or entanglements are detected by or reported to the designated biologist, monitoring can be reduced to quarterly visits, at least one of which shall coincide with the nesting season.~~

- ~~If after 12 consecutive quarterly site visits no bird or wildlife deaths, deformities, or entanglements are detected by or reported to the designated biologist, the site visits can be reduced to annual visits during the peak nesting season (March through May).~~

~~**Include visual deterrents in netting.** The netting shall have visual deterrents attached at regular intervals to alert birds to the presence of netting. Without such deterrents, birds may only see the water surface and not the netting until they are close enough to become entangled. Visual deterrents may be in the form of flashing or flagging.~~

~~**Support the netting.** The netting shall be supported sufficiently (rigid frame or piers) so that the net does not sag into the water, making water and/or aquatic invertebrates available to birds. Submerged netting is known to provide a deposition site for invertebrate egg/pupae deposition, which would increase the avian exposure risk to elements like selenium, levels of which are magnified through the food chain ("biomagnification").~~

Prepare reports for the County, CDFW, and USFWS. No less than 30 days prior to operation of the ~~evaporation~~ ponds, the project owner shall provide to the County ~~as-built~~ engineered drawings of the ponds ~~indicating that the bird exclusion netting has~~

~~been installed~~. The designated biologist shall submit annual monitoring reports to the County, CDFW, and USFWS describing the dates, durations, and results of ~~site visits~~ monitoring conducted at the ~~evaporation~~ ponds. The annual reports shall fully describe any ~~bird or~~ wildlife deaths ~~deformities, nesting events, or entanglements detected during the site visits or at any other tie,~~ and shall describe actions taken to remedy these problems. ~~Results of any egg analysis (morphological and chemical) shall also be included.~~ The report shall be submitted to the County, CDFW, and USFWS no later than ~~December~~ January 30th of every year for ~~the life~~ construction of the project.

C.6.3.5 PG&E Upgrades Impacts

C.6.3.5.1 Overview of PG&E Construction Activities

Pacific Gas and Electric (PG&E) proposes to perform interconnection work needed to connect the PG&E Switching Station (to be known as Las Aguilas Switchyard) to the Revised Project substation and install optical ground wire (OPGW) on its existing Moss Landing–Panoche 230-kilovolt (kV) transmission line to establish the primary telecommunication service between the substation at the Project Footprint and Panoche Substation located 17 miles to the east of the Project. As discussed in the Project Description, the Applicant would perform all site preparation work associated with sensitive species relocation in advance of PG&E's work within the Revised Project footprint. PG&E would be responsible for installation of foundations, erection of tubular steel poles and overhead work required to loop-in the 230 kV transmission line into PG&E's switchyard.

The installation of OPGW is a routine method of providing telecommunication services between electrical substations and generating facilities or other substations and is considered maintenance to existing electrical infrastructure. The OPGW lines would be installed on existing towers with minimal or no modification to the existing towers. The purpose of the OPGW is for system protection and control of the transmission line. The OPGW line to be installed is designed to replace traditional shield wire, which protects the line by providing a path to ground, by handling electrical faults like shield wire with the added benefit of containing optical fibers which can be used for telecommunications purposes.

The work activities associated with PG&E telecommunications upgrades are primarily considered temporary (12-16 weeks of construction activities) and would be completed during daylight hours. Existing roads within the PG&E right-of-way and helicopters would be used to provide access to work areas. The proposed work areas anticipated to have temporary ground disturbance include 12 temporary wire pull sites, three temporary helicopter landing zones, eight temporary guard structures, and nine wood pole temporary work areas.

See Section B.11 (PG&E Upgrades) in the Project Description for more details about all the PG&E work associated with the Revised Project.

C.6.3.5.2 Impact Analysis of PG&E Upgrades

The temporary and permanent impacts to biological resources resulting from the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the Revised Project (See Section C.6.3.1 above). However, due to the location and temporary nature of the construction activities several impacts addresses for the Revised Project would not occur as a result of the PG&E Upgrades. Therefore, the following impacts are not addressed further in this section:

- **BR-4:** The project would cause the loss of foraging habitat for wildlife

- **BR-5:** The project could alter the hydric and solar regimes in the area potentially eliminating required food sources for various species of wildlife
- **BR-8:** The project could result in the loss of vernal pool fairy shrimp, and loss of occupied vernal pool fairy shrimp habitat
- **BR-11:** The project will result in loss of habitat for wintering mountain plovers
- **BR-12:** The project could result in the loss foraging habitat for golden eagles, California condors, and other special-status raptors
- **BR-15**: The project could result in mortality of, and loss of habitat for, special-status bat species
- **BR-21:** The project would result in Polarized Light Pollution that may result in negative effects on plant and wildlife communities
- **BR-22:** The project could result in the exposure of wildlife to toxic trace elements and high salt concentrations in the waste water evaporation pond

PG&E Avoidance and Minimization Measures

While PG&E has an existing Habitat Conservation Plan (HCP), the San Joaquin Valley Operations and Maintenance (O&M) HCP, which applies to the portion of the route within Fresno County, PG&E will not utilize the San Joaquin Valley HCP for incidental take of species for this work. Incidental take of any special-status species will be authorized through a 2081 issued by CDFW for this work and through the Biological Opinion issued by USFWS for the Project. The species protection measures included in those documents will be used to avoid and minimize impacts to biological resources. However, for the purposes of the analysis, Table C.6-5 presents recommended avoidance and minimization measures to be implemented by PG&E prior to, and during, construction activities associated with the PG&E Upgrades and interconnection work. These measures would be adopted and enforced by the CPUC as part of the CPUC's review and oversight of the PG&E Upgrades.

Table C.6-5. Avoidance and Minimization Measures for PG&E Upgrades

Number	Avoidance and Minimization Measure
AMM BR-PGE-1	**Worker Environmental Training**. Personnel will receive ongoing environmental education. Training will include review of environmental laws and guidelines that must be followed by all personnel to reduce or avoid effects on covered species during work activities.
AMM BR-PGE-2	**Park vehicles and equipment in disturbed areas**. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
AMM BR-PGE-3	**Work during daylight hours.** Work will occur only during daylight hours, unless required to occur at night by permit or ordinance.
AMM BR-PGE-4	**Minimize disturbance from vehicle access**. The development of new access and ROW roads will be minimized, and clearing vegetation and blading for temporary vehicle access will be avoided to the extent practicable.
AMM BR-PGE-5	**Speed limit.** Vehicles will not exceed a speed limit of 15 mph in the ROWs or on unpaved roads within sensitive land-cover types.
AMM BR-PGE-6	Trash dumping, firearms, open fires, hunting, and pets will be prohibited at the work activity sites.

Table C.6-5. Avoidance and Minimization Measures for PG&E Upgrades

Number	Avoidance and Minimization Measure
AMM BR-PGE-7	**Fire prevention.** During fire season in designated State Responsibility Areas (SRAs), all motorized equipment will have federal or state approved spark arrestors; a backpack pump filled with water and a shovel will be carried on all vehicles; and fire-resistant mats and/or windscreens will be used when welding.
AMM BR-PGE-8	**Fire prevention during "red flag" conditions.** In addition, during fire "red flag" conditions as determined by California Department of Forestry (CDF), welding will be curtailed, each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.
AMM BR-PGE-9	**Restoration and erosion control.** Upon completion of any Project component, all areas that are significantly disturbed and not necessary for future operations, shall be stabilized to resist erosion, and re-vegetated and re-contoured if necessary, to promote restoration of the area to pre-disturbance conditions.
AMM BR-PGE-10	**Special-status amphibians and reptiles**. If suitable habitat for listed amphibians and reptiles is present, and protocol-level surveys have not been conducted, a qualified biologist will conduct preconstruction surveys prior to activities involving excavation. If necessary, barrier fencing will be constructed around the worksite to prevent reentry by the covered amphibians and reptiles. A qualified biologist will stake and flag an appropriate exclusion zone around the potentially occupied habitat. No monofilament plastic will be used for erosion control in the vicinity of listed amphibians and reptiles. Barrier fencing will be removed upon completion of work. Crews will also inspect trenches left open for more than 24 hours for trapped amphibians and reptiles. A qualified biologist will be contacted before trapped amphibians or reptiles (excluding blunt nosed leopard lizard and limestone salamander-which will not be handled) are moved to nearby suitable habitat.
AMM BR-PGE-11	**Avoid giant kangaroo rat and San Joaquin antelope squirrel.** Personnel shall avoid occupied or potentially occupied burrows identified by a qualified biologist within two core-areas for San Joaquin antelope squirrel and giant kangaroo rat identified by CDFW. If occupied or potentially occupied burrows in the core areas cannot be avoided, a qualified biologist shall stake and flag an appropriate work-exclusion zone and remain on-sight as a biological monitor, or the biologist shall stake and flag an appropriate work exclusion zone around active burrows prior to covered activities at the job site. If work must proceed in the exclusion zone, crews will pursue techniques to minimize direct mortality including using approved biologists to trap and hold the species in captivity, and excavating and closing burrows. The approved biologist will hold an ESA Section 10(a)(1)(A) permit for the species. The approved biologist will release the mammals as soon as possible when the work is complete. If active (occupied or potentially occupied) burrows for San Joaquin antelope squirrel or giant or Tipton kangaroo rat are present outside the two core areas identified by CDFW, a qualified biologist will stake and flag an appropriate exclusion zone and remain on-site as a biological monitor, or the biologist shall stake and flag an appropriate work exclusion zone around the burrows prior to work activities on the job site.

Table C.6-5. Avoidance and Minimization Measures for PG&E Upgrades

Number	Avoidance and Minimization Measure
AMM BR-PGE-12	**Avoid San Joaquin kit fox and American badger dens if possible.** If San Joaquin kit fox or American badger dens are present, their disturbance and destruction will be avoided where possible. However, if dens are located within the proposed work area and cannot be avoided during construction, qualified biologists will determine if the dens are occupied. If unoccupied, the qualified biologist will remove these dens by hand excavating them in accordance with USFWS procedures for kit fox (USFWS, 1999), which can also be applied to badger dens. Exclusion zones for kit fox will be implemented following USFWS procedures (USFWS, 1999) or the latest USFWS procedures. The radius of these zones will follow current standards or will be determined on a case-by-case basis in coordination with USFWS and CDFW. If badger dens are present, occupied badger dens shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den. Maternity dens shall be avoided during pup-rearing season (15 February through 1 July) and a minimum 200-foot buffer established.
AMM BR-PGE-13	**Exclusion zones for blunt-nosed leopard lizard.** If activities take place within the range of the species and outside the road shoulder, a qualified biologist will identify if burrows are present and if work can avoid burrows. If work cannot avoid the burrows, a qualified biologist will evaluate the site for occupancy and stake and flag an appropriate exclusion zone around the burrows prior to activities at the job site.
AMM BR-PGE-14	**Report dead or injured listed species**. Personnel will be required to report any accidental death or injury of a listed species or the finding of any dead or injured listed species to a qualified Biologist. Notification of CDFW and/or USFWS of any accidental death or injury of a listed species shall be done in accordance with standard reporting procedures.
AMM BR-PGE-15	**Exclusion zones for special-status plants**. If a covered plant species is present following special-status plant surveys , a qualified biologist will stake and flag exclusion zones of 100 feet around plant occupied habitat (both the standing individuals and the seed bank individuals) of the covered species prior to performing the activities. If an exclusion zone cannot extend the specified distance from the habitat, the biologist will stake and flag a restricted activity zone of the maximum practicable distance from the exclusion zone around the habitat. This exclusion zone distance is a guideline that may be modified by a qualified biologist, based on site-specific conditions (including habituation by the species to background disturbance levels).
AMM BR-PGE-16	**Conduct preconstruction surveys for active Swainson's hawk nests and implement avoidance measures if necessary.** If construction activities are anticipated to occur during the nesting season for Swainson's hawks (generally March through July), PG&E will retain a qualified wildlife biologist to conduct preconstruction surveys within 0.50 miles of construction activities that occur within or near suitable breeding habitat for nesting Swainson's hawks. The biologist will also consult with CDFW and species experts to determine if there are any known active Swainson's hawk nests or traditional territories within 0.50 miles of the work areas. If no active Swainson's hawk nests are detected, a report documenting survey methods and findings will be submitted to CDFW, and no further mitigation is required. If an active Swainson's hawk nest occurs within 0.50 miles of a planned work area, a 0.50-mile restricted activity buffer will be established around the nest. Biologists will monitor the nest and coordinate with local CDFW representatives to designate nest-specific areas of avoidance and restricted activities based upon the location of the nest relative to project activities and the type and duration of construction activities planned during the nesting season.

Table C.6-5. Avoidance and Minimization Measures for PG&E Upgrades

Number	Avoidance and Minimization Measure
AMM BR-PGE-17	**Conduct preconstruction surveys and avoidance of active western burrowing owl burrows.** CDFW (2012) recommends that preconstruction surveys be conducted at all work areas (except paved areas) in project study areas and in a 250-foot-wide buffer zone around the work areas to locate active burrowing owl burrows. PG&E will retain a qualified biologist to conduct preconstruction surveys for active burrows no more than 30 days prior to the start of construction according to the CDFW guidelines. If no burrowing owls are detected, a letter report documenting survey methods and findings will be submitted to CDFW, and no further mitigation is required.
AMM BR-PGE-17 (Cont.)	If western burrowing owls are present at the site, a qualified biologist will work with O&M staff to determine whether an exclusion zone of 160 feet during the non-nesting season and 250 feet during the nesting season can be established. If it cannot, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls. If a biologist experienced with burrowing owl determines the relocation of owls is necessary, a passive relocation effort may be conducted as described below, in coordination with CDFW as appropriate. During the nonbreeding season (generally 1 September–31 January), a qualified biologist may passively relocate burrowing owls found within construction areas. Prior to passively relocating burrowing owls, a Burrowing Owl Exclusion Plan shall be prepared by a qualified biologist in accordance with Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). The Burrowing Owl Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation.
AMM BR-PGE-17 (Cont.)	The biologist shall accomplish such relocations using one-way burrow doors installed and left in place for at least two nights; owls exiting their burrows will not be able to re-enter. Then, immediately before the start of construction activities, the biologists shall remove all doors and excavate the burrows to ensure that no animals are present the burrow. The excavated burrows shall then be backfilled. To prevent evicted owls from occupying other burrows in the impact area, the biologist shall, before eviction occurs, (1) install one-way doors and backfill all potentially suitable burrows within the impact area, and (2) install one-way doors in all suitable burrows located within approximately 50 feet of the active burrow, then remove them once the displaced owls have settled elsewhere. When temporary or permanent burrow-exclusion methods are implemented, the following steps shall be taken:
AMM BR-PGE-17 (Cont.)	Prior to excavation, a qualified biologist shall verify that evicted owls have access to multiple, unoccupied, alternative burrows, located nearby (within 250 feet) and outside of the projected disturbance zone. If no suitable alternative natural burrows are available for the owls, then, for each owl that is evicted, at least two artificial burrows shall be installed in suitable nearby habitat areas. Installation of any required artificial burrows preferably shall occur at least two to three weeks before the relevant evictions occur, to give the owls time to become familiar with the new burrow locations before being evicted. The artificial burrow design and installation shall be described in the Burrowing Owl Exclusion Plan per Appendix E of the *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). Passive relocation of burrowing owls shall be limited in areas adjacent to Project activities that have a sustained or low-level disturbance regime; this approach shall allow burrowing owls that are tolerant of Project activities to occupy quality, suitable nesting and refuge burrows. The use of passive relocation techniques in a given area shall be determined by a qualified biologist who may consult with CDFW, and shall depend on existing and future conditions (e.g., time of year, vegetation/topographic screening, and disturbance regimes).

Table C.6-5. Avoidance and Minimization Measures for PG&E Upgrades

Number	Avoidance and Minimization Measure
AMM BR-PGE-18	**Wetland and Other Waters Avoidance and Minimization.** Impacts to wetlands and other waters shall be avoided to the extent feasible. The Project shall be designed, constructed and operated to avoid and minimize impacts to wetlands and other waters to the extent feasible. General Project staging and laydown activities shall not occur within wetlands during construction. To avoid unnecessary egress into waterways and wetlands, all wetlands and waters in the Project impact area shall be clearly marked with highly visible flagging, rope, or similar materials in the field. Access allowed within these features for the purposes of construction in and near such features (e.g., road crossings) shall be clearly delimited, and be staked in the field, to prevent construction personnel from causing impacts to areas outside of work limits. Where necessary, silt fencing or other measures may be used to protect adjacent wetlands and waterways from sediment transport or other indirect impacts that could result from adjacent construction. Wetlands and other waters within construction areas that are to be avoided shall be fenced or flagged for avoidance prior to construction, and a biological monitor shall be present to ensure compliance with off-limits areas. Additionally, the following measures are proposed to further minimize project impacts on wetland and other waters during construction activities: • Grading and construction activities should be done during dry conditions. However, if grading and construction must be conducted during wet conditions, then the site specific best management practices (BMPs) for erosion will be implemented. • All work within waters that have only low or intermittent flow shall be performed when the channel is dry or at its lowest flow. Work within channels with perennial flow shall be performed during times when there is no flow to the extent practical. • Activities near wetland and waters that have the potential to degrade water quality will be conducted during the dry season. If work activities are necessary during the rainy season, they shall be conducted during dry spells between rain events. • All drainage patterns and grades will be returned to preconstruction conditions • Unanticipated temporary impacts to wetlands and other waters shall be mitigated through onsite restoration, if impacts are restored within a single year, with most restoration expected to occur at the onset of the rainy season to enhance germination success (i.e., areas impacted in a given year must be restored prior to 1 March of the following year to be considered temporary and require no additional mitigation). Areas of construction access-related temporary impacts that cannot be restored prior to 1 March the following year and would remain exposed during the dry season shall be restored the following fall. Compensatory mitigation for temporarily impacted areas that are not restored within a year shall be provided at a ratio acceptable to the agency(ies) with jurisdiction over that wetland or water feature.

Impact BR-1: Construction activities would result in temporary and permanent losses of native vegetation (Class III)

As described in Section C.6.1.2 (PG&E Upgrades: Environmental Setting) six vegetation community-landform types were observed on the PG&E Upgrades route: Annual Brome Grassland, Allscale Saltbush Scrub, Ephemeral Drainages, Orchard, Vineyard, and Disturbed/Developed.

With the exception of Ephemeral Drainages, these habitats and landform-types are not considered sensitive habitat. Temporary impacts would occur in the following quantities within these habitats along the PG&E route:

- Annual Brome Grassland: 0.39 acres
- Allscale Saltbush Scrub: 0.39 acres
- Ephemeral Drainage: 0.002 acres (if complete avoidance not possible)

- Orchard / Vineyard: 0.27 acres
- Disturbed Developed: 2.33 acres

Short-term temporary impacts would affect a negligible proportion of the regional availability of these habitat types. Therefore, project-specific impacts are expected to be less than significant (Class III). The significance of the loss of this habitat as habitat for special-status species is addressed in subsequent sections on a species by species basis.

Impact BR-2: The project could result in the establishment and spread of noxious weeds, invasive and non-native plants (Class III)

Invasion or spread of noxious weeds is often facilitated by impacts such as ground-disturbance (e.g., grading), alteration of hydrology (including both reduction and increase in the amount of water and changes in the season in which watering occurs), and changes in grazing regimes. None of these impacts are expected to occur along the PG&E route because construction crews would access existing towers via helicopter and existing access roads. Vehicles would remain on existing roads, and equipment used at wire pull sites would be transported via trailer and/or helicopter from PG&E maintenance yards. PG&E's existing maintenance program would ensure that all construction equipment has been cleaned of soil and plant parts, including seeds, before entering any work area. Therefore, the potential direct and indirect effects from the establishment and spread of noxious weeds and invasive and non-native plants from the PG&E upgrade activities would be less than significant (Class III)

Impact BR-3: The project could disturb special-status plant species or their habitat (Class III)

Direct impacts on special-status plant species located within the project footprint could occur if special-status species are present within a work area.

As described in Section C.6.1.2 (PG&E Upgrades: Environmental Setting), numerous special-status plant species are known to occur in the region and potentially suitable habitat for many of these species occurs along the OPGW route. Three plant species listed under the Federal and/or California Endangered Species Acts that could potentially occur in work areas for PG&E Upgrades are the federally-threatened San Benito evening primrose, the federally and state-endangered California jewelflower, and the federally endangered San Joaquin woollythreads. At the time surveys were conducted along the OPGW route (i.e., prior to conducting site-wide, protocol-level botanical surveys), no special-status plants were identified. Most special-status plants were unlikely to be identified during the survey because of the time of year and lack of flowering plants.

Impacts on a small portion of a population (i.e., a few individuals) of plants that are not federally or State-listed, or impacts to a population that would not substantially affect the range of the species, are not considered significant impacts under CEQA. However, temporary impacts to special-status plant species can also have long-term permanent impacts due to specific microhabitat requirements. While the PG&E upgrade activities are limited to 0.78 acres, there is potential for presence of special-status plant species. Therefore impacts may be significant depending on the species and population within the construction area.

The County recommends that PG&E implement and that the CPUC adopt AMM BR-PGE-1 through BR-PGE-9 to minimize general environmental impacts. In addition, AMM BR-PGE-15 would require conducting surveys and establishing exclusion zones to avoid special-status plants. With the implementation of these measures, impacts would be less than significant (Class III).

Impact BR-6: Construction activities, including the use of access roads, grading, and heavy equipment, would result in disturbance to wildlife and may result in wildlife mortality (Class III)

Temporary effects from the development of the PG&E Upgrades would result from vehicle and equipment movement, placement of materials, and helicopter and equipment noise. Small mammals, amphibians and reptiles, eggs and nestlings of bird species with well-hidden nests would be particularly vulnerable, and several of these more sedentary species have special status designated by the CDFW and/or USFWS. Note that individual special-status wildlife species are addressed in separate impact discussions.

The PG&E route represents a small proportion of regional habitat and regional populations of the more common wildlife species that would be impacted by construction activities. Construction of the project would temporarily alter the existing condition of only 2.6 acres within the existing PG&E right-of-way (0.78 acres within suitable upland habitat for terrestrial wildlife species). The County recommends that PG&E implement and that the CPUC can and should adopt AMMBR-PGE-10 through BR-PGE-13 and BR-PGE-16 and BR-PGE-17 to reduce the impacts of construction on wildlife. These measures include WEAP training and limitations on vehicle access and work hours. With the implementation of these measures, impacts would be less than significant (Class III).

Impact BR-7: The project could result in injury or mortality of, and loss of habitat for, terrestrial California Species of Special Concern (Class III)

Approximately 0.78 acres of suitable upland habitat for special-status species is located within proposed work areas along the PG&E route. While habitat would not be permanently lost as a result of the project activities, construction could result in injury or mortality of special-status species due to vehicle strikes and collisions, and disturbance from helicopter activity along the route. With the implementation of AMM BR-PGE-1 through BR-PGE-13 and BR-PGE-17 to require worker training, working only during daylight, minimizing vehicle access, and other minimization and avoidance measures, impacts would be less than significant (Class II).

As described above, there is potential for Swainson's hawks to nest in trees within 0.50 miles of the work areas located on the San Joaquin Valley floor, and several dead Swainson's hawks were observed along I-5 during surveys of the PG&E route. Construction activities, especially the use of helicopters near an active nest, could result in direct impacts on nesting Swainson's hawks. These activities have the potential to cause nesting Swainson's hawks to prematurely abandon an active nest, resulting in the death of chicks or failure of eggs. Premature abandonment of an active nest that results in the death of chicks or failure of eggs would be a significant impact to this species listed as threatened under the California Endangered Species Act.

The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 to reduce general environmental impacts. In addition, the County recommends that PG&E implement AMM BR-PGE-16 (avoid impacts on Swainson's hawk) to avoid nest abandonment and reduce impacts to Swainson's hawks to less than significant levels (Class III).

Impact BR-9: The project could result in the loss of individual California tiger salamanders or the permanent or temporary loss of CTS habitat (Class III)

Suitable breeding ponds were not identified within the existing PG&E right-of-way or a 500-foot buffer. However, California tiger salamander known to travel up to 1.2 miles from their breeding ponds, and suitable breeding ponds may be present in the vicinity of the route. If California tiger salamanders are present, project activities could result in injury and mortality of individuals, which would be significant

impact. The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 to reduce general environmental impacts. In addition, the County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-10 (surveys and avoidance for special-status amphibians and reptiles). With the implementation these measures, impacts would be less than significant (Class III).

Impact BR-10: The project would result in the loss of individual blunt-nosed leopard lizards and their habitat (Class III)

Several of the proposed work areas for the PG&E Upgrades are located within suitable habitat for blunt-nosed leopard lizards. These areas would be temporarily disturbed by construction noise and habitat disturbance and have the potential to result in injury or mortality, and adverse impacts to habitat including collapsing occupied burrows. The injury or loss of a federally and state-listed species (and a fully protected species) and/ or adverse impacts to habitat comprised of the direct collapsing of occupied burrows would be a significant impact without mitigation.

If occupied burrows are not collapsed, the temporary impacts resulting in the modification of vegetation would not be significant for this species. The 0.78 acres of affected habitat are spread over approximately 5 locations; therefore, at any given site the temporary impacts are predicted to affect a minor proportion of the species home range. Blunt-nosed leopard lizard home range varies in size from 0.25 to 2.7 acres for females and 0.52 to 4.2 acres for males (Tollestrup 1983, Kato et al. 1987*b*).

The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 and BR-PGE-13 to reduce general environmental impacts. Implementation of AMM BR-PGE-9 would require restoration of temporarily disturbed areas and AMM BR-PGE-13 requires avoidance of blunt-nosed leopard lizard. With the implementation these measures, impacts would be less than significant (Class III). Preservation of mitigation lands for the Revised Project would also off-set impacts on blunt-nosed leopard lizard.

Impact BR-13: The project could result in the loss of burrowing owl, loss of foraging habitat for burrowing owl and loss of occupied burrowing owl habitat (Class III)

Approximately 0.78 acres of suitable burrowing owl habitat is located within proposed work areas along the PG&E route. While habitat would not be permanently lost as a result of the project activities, construction could result in injury or mortality of burrowing owls within 250 ft of the work areas. Construction activities, including helicopter use, could result in removal of, or displacement from, an occupied breeding or wintering burrow site and loss of adults, young, or eggs. This impact is considered potentially significant because, absent mitigation, construction could result in a reduction in the local population of burrowing owls. The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 to reduce general environmental impacts. In addition, the County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-17 (pre-construction surveys and avoidance of burrowing owl). With the implementation of these measures, impacts would be less than significant (Class III).

Impact BR-14: The project could result in electrocution or collision with overhead wires by State and/or federally protected birds (Class III)

The risks associated with electrocution or collision with overhead wires by State and/or federally protected birds is similar to that described above for the Revised Project. The PG&E Upgrades would require the installation of OPGW on existing towers with minimal or no modification to the existing towers. The purpose of the OPGW is for system protection and control of the transmission line. The

OPGW line would replace the shield wire on the north side of the existing PG&E towers approximately 3-5ft above the existing top conductor. The existing PG&E towers along the route currently accommodate 4 conductors and are approximately 80-120 feet in height.

In addition, up to 3 new microwave towers would be constructed as described below.

- **PVS Substation Tower.** The microwave tower constructed at the PVS substation would be approximately 100 feet tall and would be located adjacent to the two substations and existing 230 kV PG&E route.
- **Call Mountain Tower.** The existing tower owned by CalFire would be used to co-locate equipment needed to provide telecommunications from the Project site to PG&E's system. An existing road would be utilized to access the proposed Call Mountain tower site.
- **Panoche Mountain Tower.** If equipment cannot be co-located on an existing tower near the site, a new tower may need to be constructed at Panoche Mountain; however, there are two nearby towers owned by CHP and ATC. The new microwave tower (if needed) would be similar to existing infrastructure already constructed.
- **Helm Substation Tower.** The tower to be constructed at Helm Substation would likely be approximately 100 feet in height and located within the existing substation fenceline.

Collision Risk. Avian interactions with transmission lines, towers, and structures and the risks those interactions impose vary greatly by location. Bird collisions with power lines generally occur when a power line or other aerial structure transects a daily flight path used by a concentration of birds or migrants traveling at reduced altitudes (Brown, 1993). Collision rates generally increase in low light conditions; during inclement weather, such as rain or snow; during strong winds; and during panic flushes when birds are startled by a disturbance or are fleeing from danger. Collisions are more likely near wetlands, valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths.

Passerines (e.g., songbirds) and waterfowl (e.g., ducks) are known to collide with wires (APLIC, 2006), particularly during nocturnal migrations or poor weather conditions (Avery et al., 1978). However, passerines and waterfowl have a lower potential for collisions than larger birds, such as raptors (e.g., golden eagle, red-tailed hawk) as some behavioral factors contribute to a lower collision mortality rate for these birds. Passerines and waterfowl tend to fly under power lines, while larger species generally fly over lines and risk colliding with higher static lines. Also, many smaller birds tend to reduce their flight activity during poor weather conditions (Avery et al., 1978).

Electrocution. The majority of raptor electrocutions are caused by lines that are energized at voltage levels between 1 kV and 69 kV, and "the likelihood of electrocutions occurring at voltages greater than 69 kV is extremely low" (APLIC, 2006). This suggests that the high-voltage PG&E lines would present a low electrocution threat to large birds.

Electrocution can occur when horizontal separation is less than the wrist-to-wrist (flesh-to-flesh) 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). Raptors that use the towers or wooden poles for nesting could be electrocuted while landing. Furthermore, nests may be built in areas that are susceptible to electrical charges that could result in fire as well as an electrical outage.

California condors (*Gymnogyps californianus*), bald and golden eagles, red-tailed hawks, and other large aerial perching birds are also susceptible to electrocution on power lines because of their large size, distribution, and proclivity to perch on tall structures that offer views of potential prey. The design characteristics of transmission towers/poles are a major factor in raptor electrocutions. 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.

The largest birds with a reasonable likelihood of coming in contact with the high voltage transmission lines in the vicinity of the route would be the golden eagle which has a wingspan of up to 7.5 feet (wrist-to-wrist length of 3.5 feet) and height up to 2.2 feet and the bald eagle with a wingspan of up to 8 feet (wrist-to-wrist length of 2.8 feet) and height up to 2.3 feet(APLIC, 2006).

The red-tailed hawk, common raven, turkey vulture (*Cathartes aura*), great horned owl (*Bubo virginianus*), and barn owl could come in contact with the high voltage transmission lines, although these birds are more likely to be impacted by medium voltage collection lines that would be numerous and widespread throughout the project site. The red-tailed hawk's wingspan is up to 4.7 feet (wrist-to-wrist length of 1.9 feet) and height up to 1.8 feet (APLIC, 2006). Other large birds that could come in contact with the medium voltage collection lines include the turkey vulture (5.8-foot wingspan, two-foot wrist-to-wrist length, 1.8 feet tall), great horned owl (4.3-foot wingspan, 1.6-foot wrist-to-wrist length, 1.3 feet tall), and barn owl (3.8-foot wingspan, 2.1-foot wrist-to-wrist length, 1.3 feet tall) (APLIC, 2006). None of the wrist-to-wrist lengths (or even wingspans) or heights of these birds is long enough to simultaneously contact two energized phase conductors for the high voltage transmission line, but they are large enough to be electrocuted by bridging medium voltage wires.

Potential direct impacts on birds that may result from the PG&E Upgrades are:

- **Collision**. There would be no increased risk of collision due to the installation of the OPGW alone, as the OPGW would replace existing shield wire and there are numerous towers and high-voltage conductors throughout the existing right-of-way, with the existing towers supporting 3 conductors. Installation of the OPGW would not result in net increase of collisions compared to baseline conditions.

  While it is difficult to predict the magnitude of collision-caused bird mortality as a result of the new microwave tower construction proposed at the PVS substation, Helm Substation, and at Panoche Mountain (potential), based on the known distribution of the species in the project area and observations made during reconnaissance surveys, it is generally expected that collision mortality may occur to some degree. As collisions are known to occur with a variety of manmade and natural objects the construction of microwave towers may result in net increase of collisions compared to baseline conditions.

- **Electrocution.** As with the Revised Project, all work associated with the PG&E Upgrades would be in compliance APLIC guidelines, which would reduce impacts to birds by reducing or minimizing collision and electrical risk. PG&E would also comply with the Federal Communications Commission (FCC) approval process and Federal Aviation Administration (FAA) filings and approval, including installations of FAA-lights on the microwave towers, as required. The County also recommends that PG&E implement its existing Avian Protection Plan to track and minimize impacts on birds (available at: http://www.pge.com/en/about/environment/pge/stewardship/birds/index.page).

With the implementation of APLIC guidelines and this PG&E's Avian Protectio0n Plan, impacts would be less than significant (Class III).

Impact BR-16: The project could result in the loss of giant kangaroo rat, loss of foraging habitat, and loss of occupied habitat (Class III)

Several of the work areas for the PG&E Upgrades are located within suitable habitat for giant kangaroo rat. Approximately 0.78 acres of suitable habitat would be temporarily disturbed by construction noise and habitat disturbance, although there would be no net loss of suitable habitat. Although these activities would only temporarily affect suitable habitat, construction activities could disturb or result in injury or mortality by running over giant kangaroo rats or collapsing occupied burrows. This impact is potentially significant because it could result in the injury or loss of a federally and state-listed species. The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 and BR-PG-11 to minimize general environmental impacts. In addition, AMM BR-PGE-11 (avoid impacts on giant kangaroo rat) would reduce impacts on this species. With the implementation of these measures, impacts would be less than significant (Class III).

Impact BR-17: The project could result in the loss of San Joaquin antelope squirrel, loss of foraging habitat, and loss of occupied habitat (Class III)

Several of the work areas for the PG&E Upgrades are located within suitable habitat for San Joaquin antelope squirrel. Approximately 0.78 acres of suitable habitat would be temporarily disturbed by construction noise and habitat disturbance, although there would be no permanent loss of suitable habitat. Although these activities would only temporarily affect suitable habitat, these activities could disturb or result in injury or mortality by running over these species or collapsing occupied burrows. This impact is potentially significant because it could result in the injury or loss of a state-listed species. The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9, and BR-PGE-11 to minimize general environmental impacts. In addition, AMM BR-PGE-11 (avoid San Joaquin antelope squirrel) would reduce impacts on this species. With the implementation of these measures, impacts would be less than significant (Class III).

Impact BR-18: The project could result in mortality of, and loss of habitat for American badgers (Class III)

Suitable habitat for American badger was observed throughout most of the proposed work areas for the PG&E Upgrades. Although most construction activities would only temporarily affect suitable habitat, these activities could result in injury or mortality through vehicle collisions with American badgers or through collapsing occupied burrows. The County recommends that PG&E implement and that the CPUC can and should adopt AMM BR-PGE-1 through BR-PGE-9 to minimize general environmental impacts. In addition, AMM BR-PGE-12 (Avoid San Joaquin kit fox and American badger dens) would reduce impacts to a less than significant level (Class III).

Impact BR-19: The project could result in the loss of San Joaquin kit fox, loss of foraging habitat, and loss of occupied habitat (Class III)

Most of the proposed work areas occur within 0.78 acres of suitable habitat for kit fox, and San Joaquin kit fox sign was observed at several locations with the existing PG&E right-of-way. Though most construction activities would have only temporary effects, these activities could result in injury or mortality through vehicle collisions or through collapsing occupied burrows. The entrapment, injury or loss of a federally and state-listed species would be a significant impact. The County recommends that PG&E implement and that the CPUC can and should adopt AMMBR-PGE-1 through BR-PGE-9 and BR-PGE-12 to minimize general environmental impacts. In addition, AMM BR-PGE-12 (avoid San Joaquin kit fox dens) would reduce impacts to a less than significant level (Class III).

Impact BR-20: The project could result in the loss of jurisdictional wetland habitats (Class III)

The existing PG&E access road traverses several unnamed drainages that may qualify as jurisdictional waters regulated by the USACE and/or CDFW. Temporary crossings may be required for construction vehicles at up to three locations comprising 0.002 acres. All temporary crossings would avoid impacts to drainages to the extent possible and would likely be limited to 12-16 weeks. However, any unavoidable temporary impacts lasting more than one rainy season, would be considered significant under CEQA.

Throughout California, the quality and quantity of wetland habitats has dramatically declined due to the construction of dams, dikes, and levees as well as due to water diversions, the filling of wetland habitat for development, and the overall degradation of general water quality due to inputs of runoff from agricultural, urban, and infrastructure development and other sources. Wetlands also present unique habitat functions and values for wildlife, and provide habitat for plant species adapted to wetland hydrology. As a result, wetland habitat types are considered sensitive habitats. Wetlands are also federally protected under Section 404 of the Clean Water Act.

The County recommends that PG&E implement AMM BR-PGE-1 through BR-PGE-9 and BR-PGE-18 to minimize general environmental impacts. In addition, AMM BR-PGE-18 (wetland avoidance) minimizes impacts on wetlands. With the implementation of these measures, impacts would be less than significant (Class III).

C.6.3.6 Cumulative Impact Analysis

Geographic Extent

The geographic extent for the analysis of cumulative impacts related to biological resources has not changed since the preparation of the 2010 Final EIR. However, cumulative impacts scenario, as demonstrated in the table and map in Section D, includes additional projects (including solar) approved within the larger Ciervo-Panoche region, areas of western Fresno County, regions of western Kern County in the San Joaquin Valley, eastern San Luis Obispo County, and northern Santa Barbara County.

Impact BR-23: Contribute to cumulatively considerable effects on biological resources (Class II)

Cumulative effects from the development of the Revised Project are essentially the same as those identified in the 2010 Final EIR. Project design and construction methodology has been further refined since 2010 resulting in an overall reduction in permanently disturbed areas and an increase in the mitigation lands. The Revised Project includes an approximately 2,506-acre project area, reduced from the estimated project area of the Approved Project of 3,302 acres. Ground disturbance associated with permanent Revised Project features have also been reduced to a maximum of 1,888 acres from the Approved Project which included up to 2,203 acres of permanent disturbance. Finally, additions to the mitigation package have increased the Valley Floor Conservation Area to 2,514 acres from the 2,072 acres (1,683 acres within original project footprint and 389 acres within existing floodplain) described under the Approved Project.

In total, the Applicant has acquired rights to a substantial amount of mitigation lands, which would be persevered in perpetuity. As described above, and in the 2010 Final EIR, these mitigation lands are comprised of approximately 10,782 acres within the Panoche Valley that have slopes less than 11 percent contiguous with the Valley floor, are occupied by San Joaquin kit fox, giant kangaroo rat, and blunt-nosed leopard lizard, and are considered likely to contain the same genetically distinct populations of these species that occur on the project site. In addition, per MM BR-23.1, the Applicant has committed to record a permanent biological conservation easement on the entire footprint of the

Approved Project prior to the start of construction. The conservation easement would require preservation in perpetuity of all project areas retired from the development footprint at the time of project decommissioning, with the exception of the PG&E switchyard which would be owned and operated by PG&E, and decommissioning would occur per the utility specification at the time.

Through the implementation of the refined mitigation measures and avoidance and minimization measures discussed above, the Revised Project, including the PG&E Upgrades, would not represent a considerable contribution to cumulative impacts (Class II).

C.6.4 Summary of Impacts

The significance of impacts for biological resources for the Revised Project and for the PG&E Upgrades is summarized in Sections C.6.5.1 through C.6.5.3.

C.6.4.1 Solar Project

There are no changes to the significance of biological resource impacts from the conclusions of the Final EIR. The impacts summarized in Table C.6-3 remain accurate. With implementation of the Mitigation Measures and Applicant Proposed Measures, potential project impacts to biological resources would remain less than significant (Class III) or less than significant with mitigation (Class II).

C.6.4.2 PG&E Upgrades

With implementation of the AMMs detailed above, potential project impacts to biological resources resulting from the PG&E Upgrades would remain less than significant (Class III).

C.6.4.3 Overall Significance of Impacts

There are no significant impacts to biological resources that result from either the Revised Project or the PG&E Upgrades. Mitigation measures adopted in 2010 would reduce potentially significant impacts associated with solar project construction and operation to less than significant levels (Class II). All biological resources impacts related to the PG&E Upgrades would be less than significant (Class III) with the implementation of PG&E AMMs.

With implementation of mitigation measures, APMs, and AMMs, overall cumulative biological impacts would be less than significant (Class II).

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Aspen Environmental Group

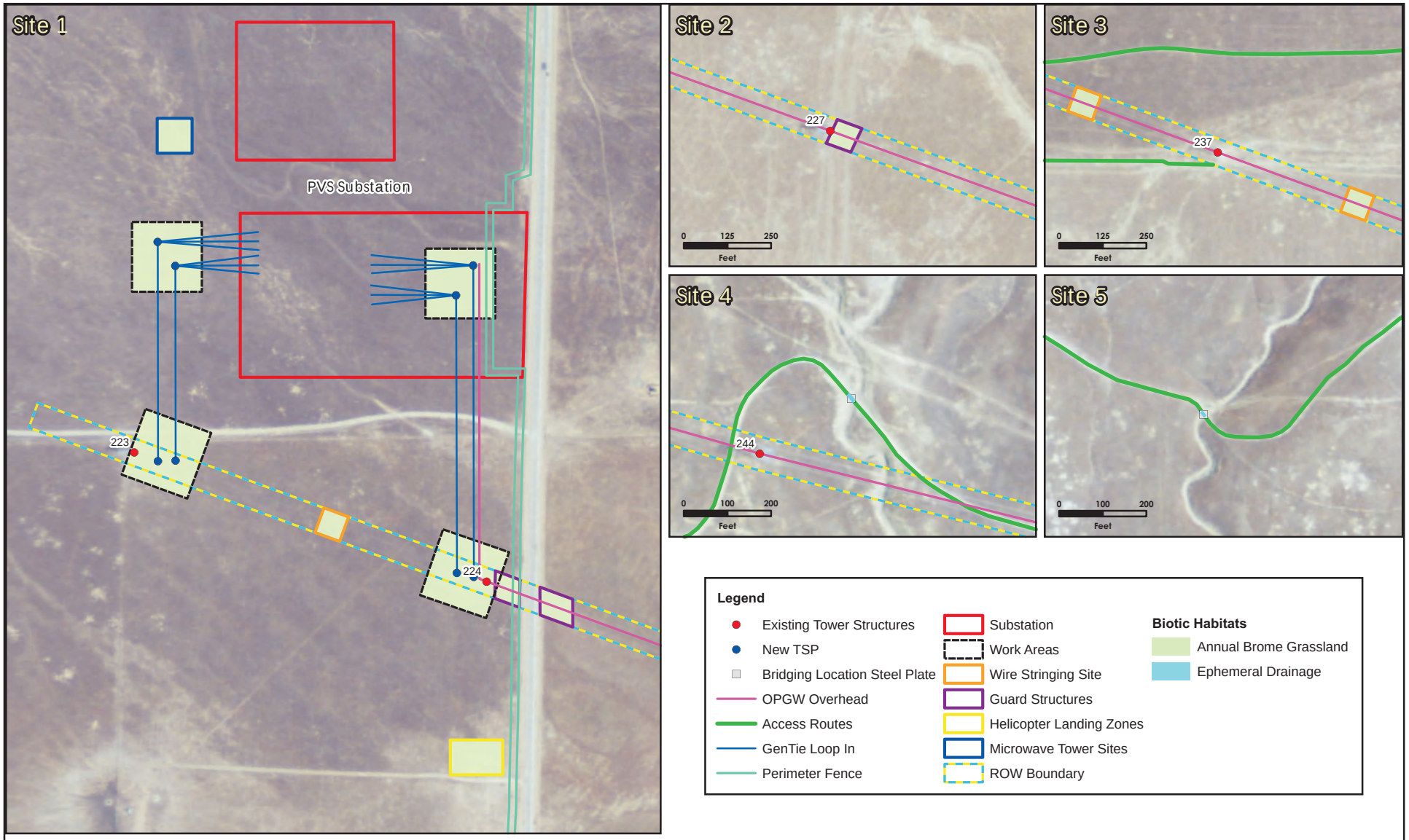
N 6,000 3,000 0 6,000 Feet

Legend

- Index Sites
- Existing Tower Structures
- OPGW Overhead
- Perimeter Fence

Figure C.6-1a

Biotic Habitat for PG&E Upgrades

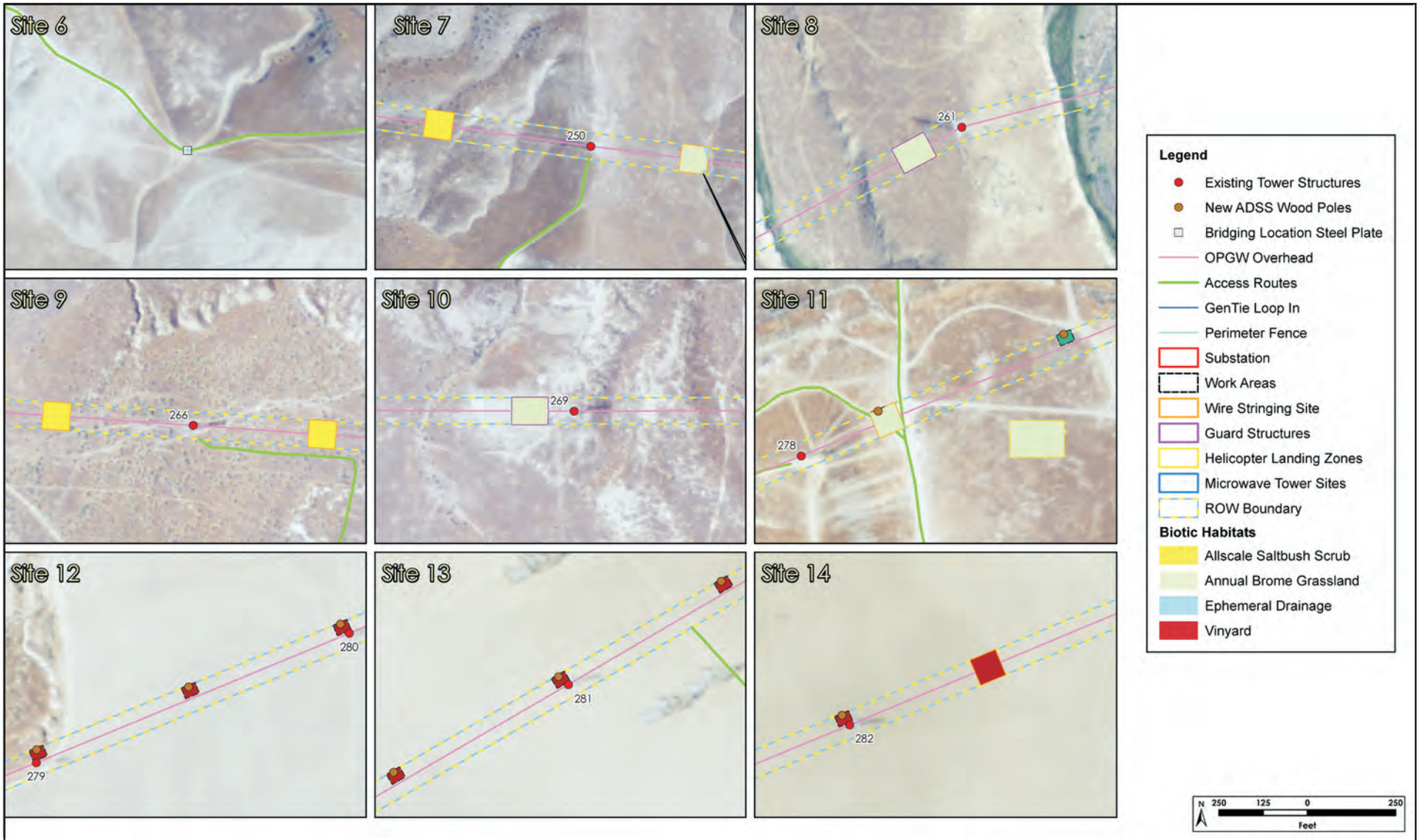


Aspen Environmental Group

N 250 125 0 250
Feet

Figure C.6-1b

Biotic Habitat for PG&E Upgrades



Aspen Environmental Group

Figure C.6-1c

Biotic Habitat for PG&E Upgrades

Aspen Environmental Group

N 250 125 0 250
Feet

Figure C.6-1d

Biotic Habitat for PG&E Upgrades

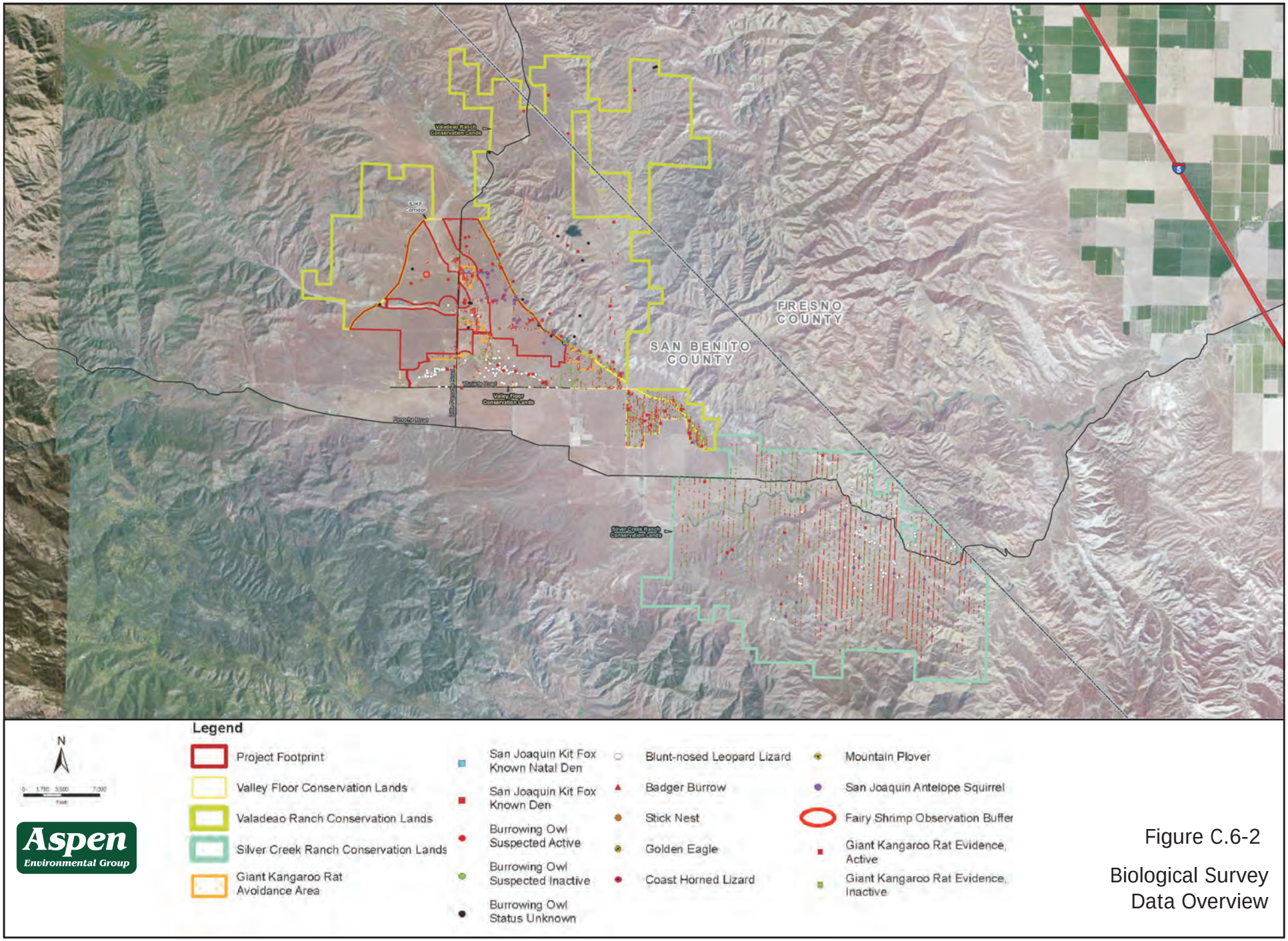


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Figure C.6-2

Biological Survey Data Overview

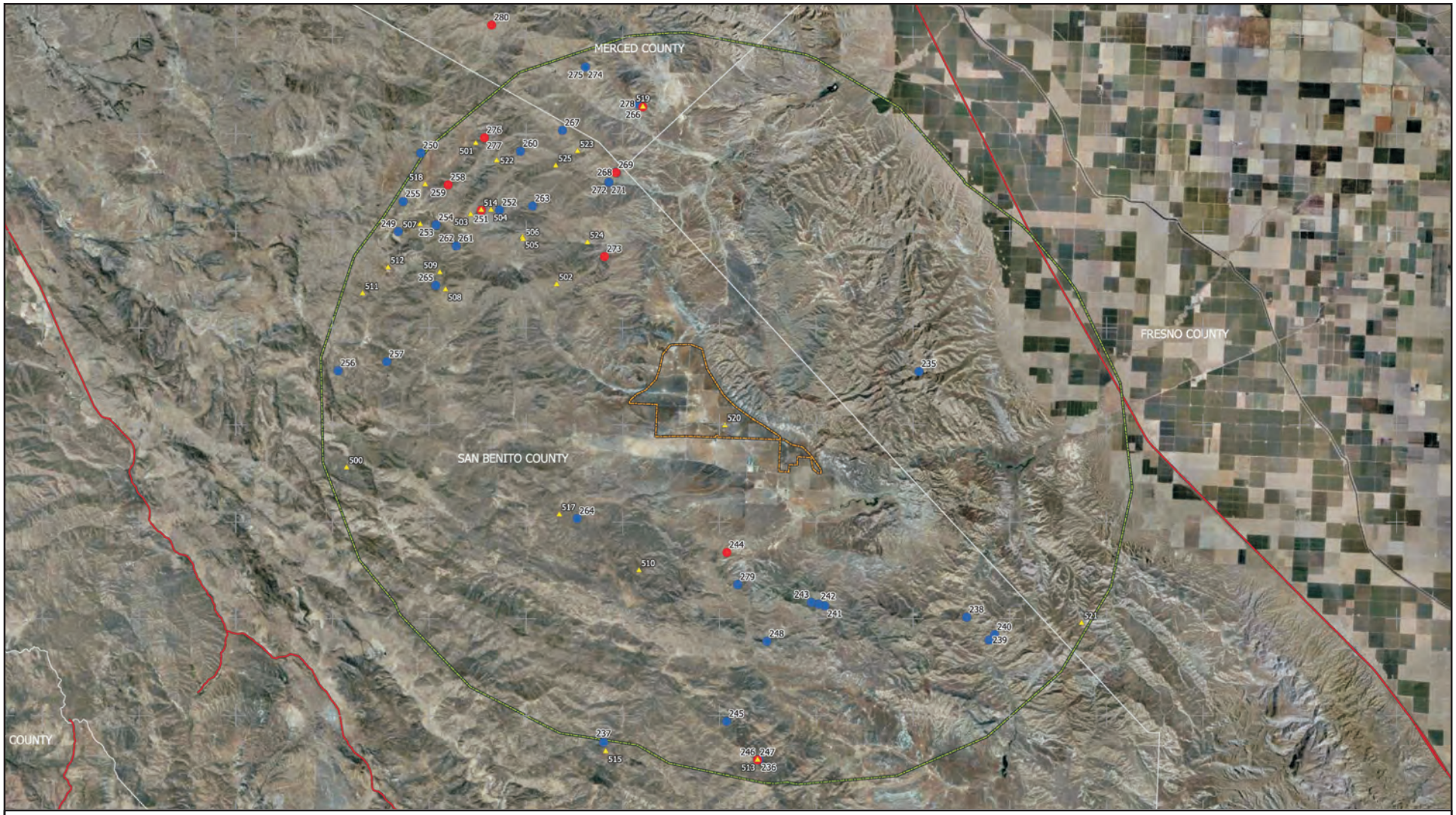

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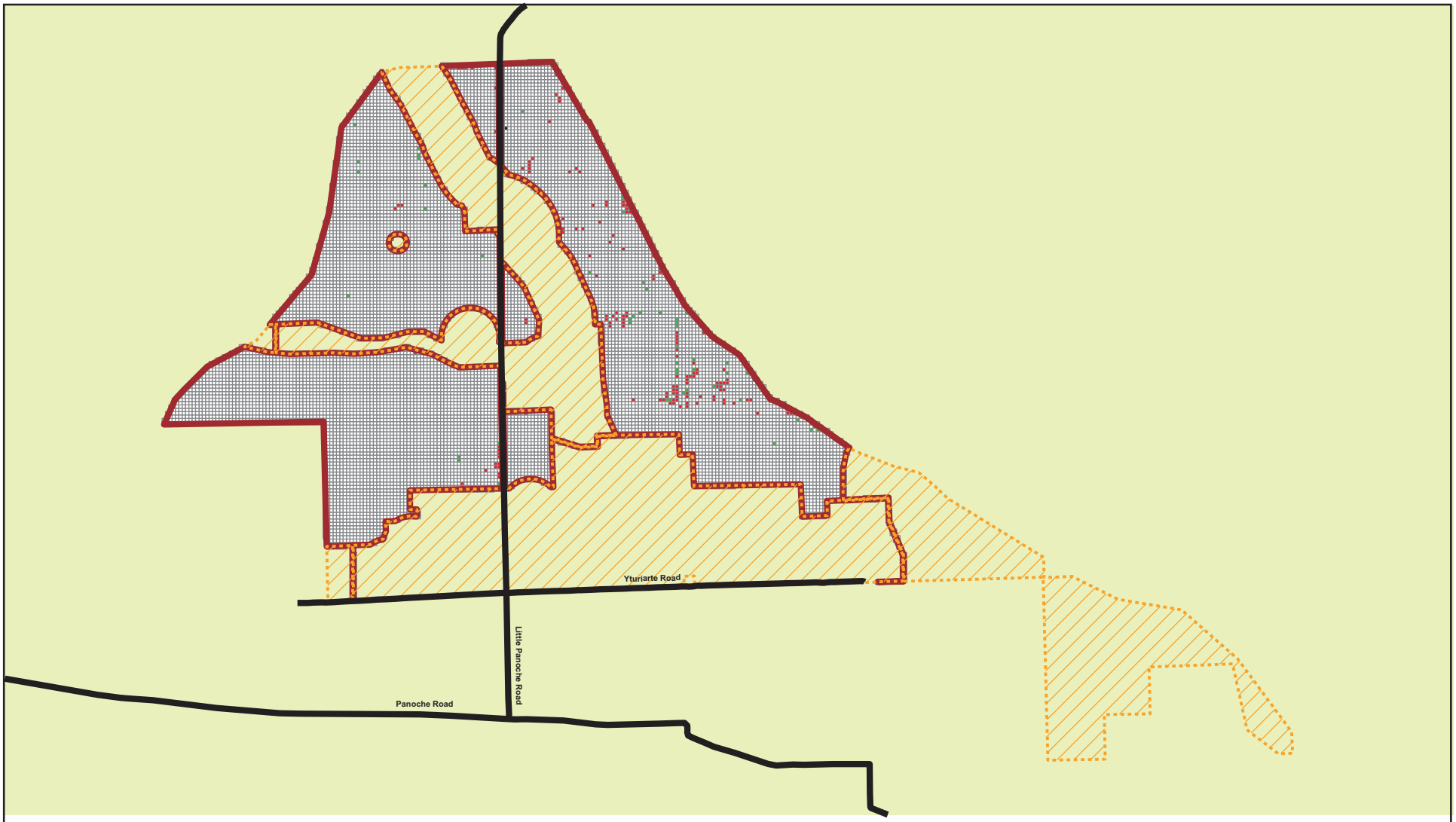
Figure C.6-3

Golden Eagle Nesting Survey Results



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N

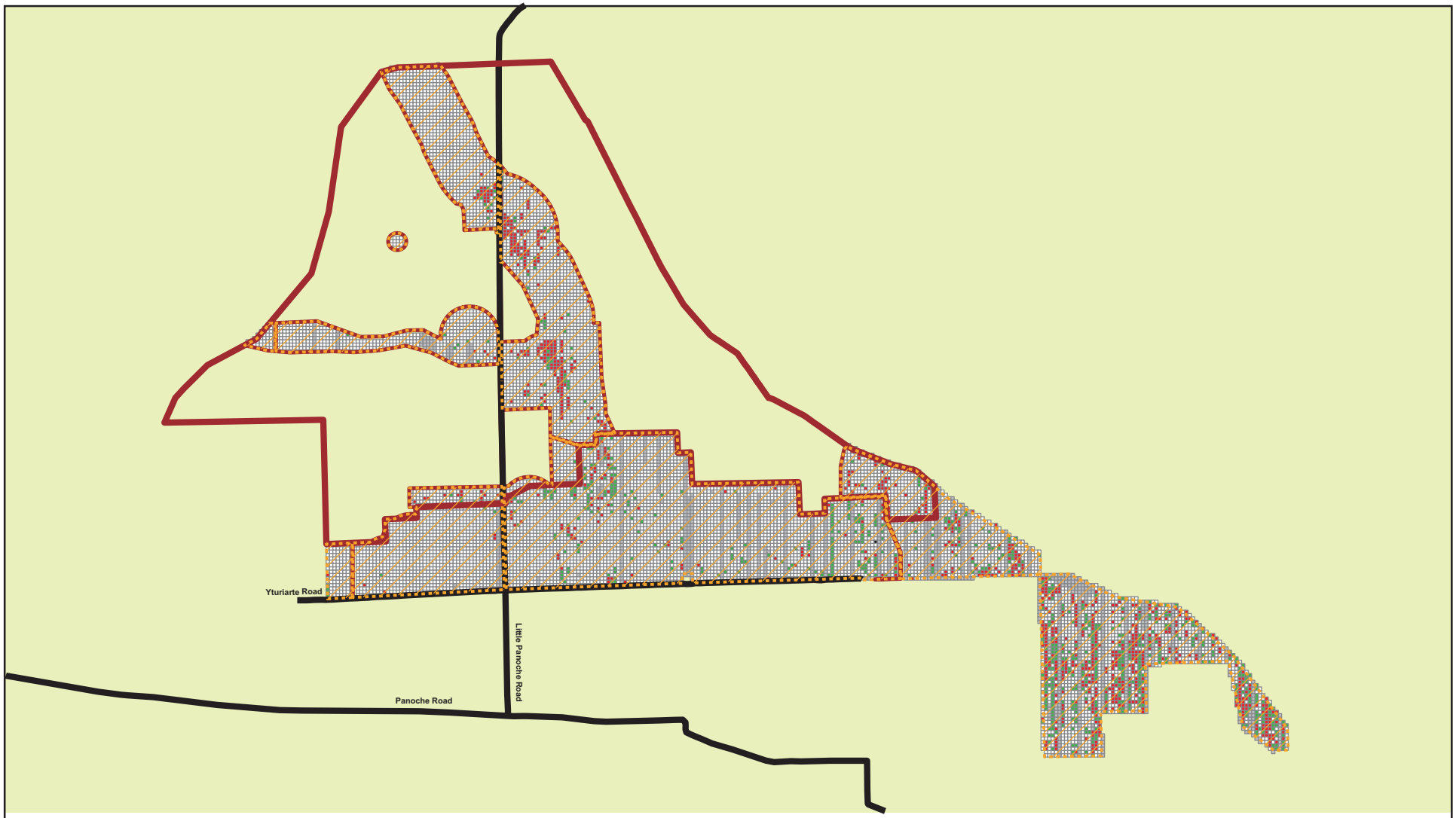
0 1,250 2,500
Feet

Legend

- Project Footprint
- Valley Floor Conservation Lands
- No Data
- No Activity
- GKR Evidence, Active
- GKR Evidence, Inactive
- Relict GKR Sign Present

Figure C.6-4a

2013 Giant Kangaroo Rat Observations
Revised Project Footprint



Aspen Environmental Group

N

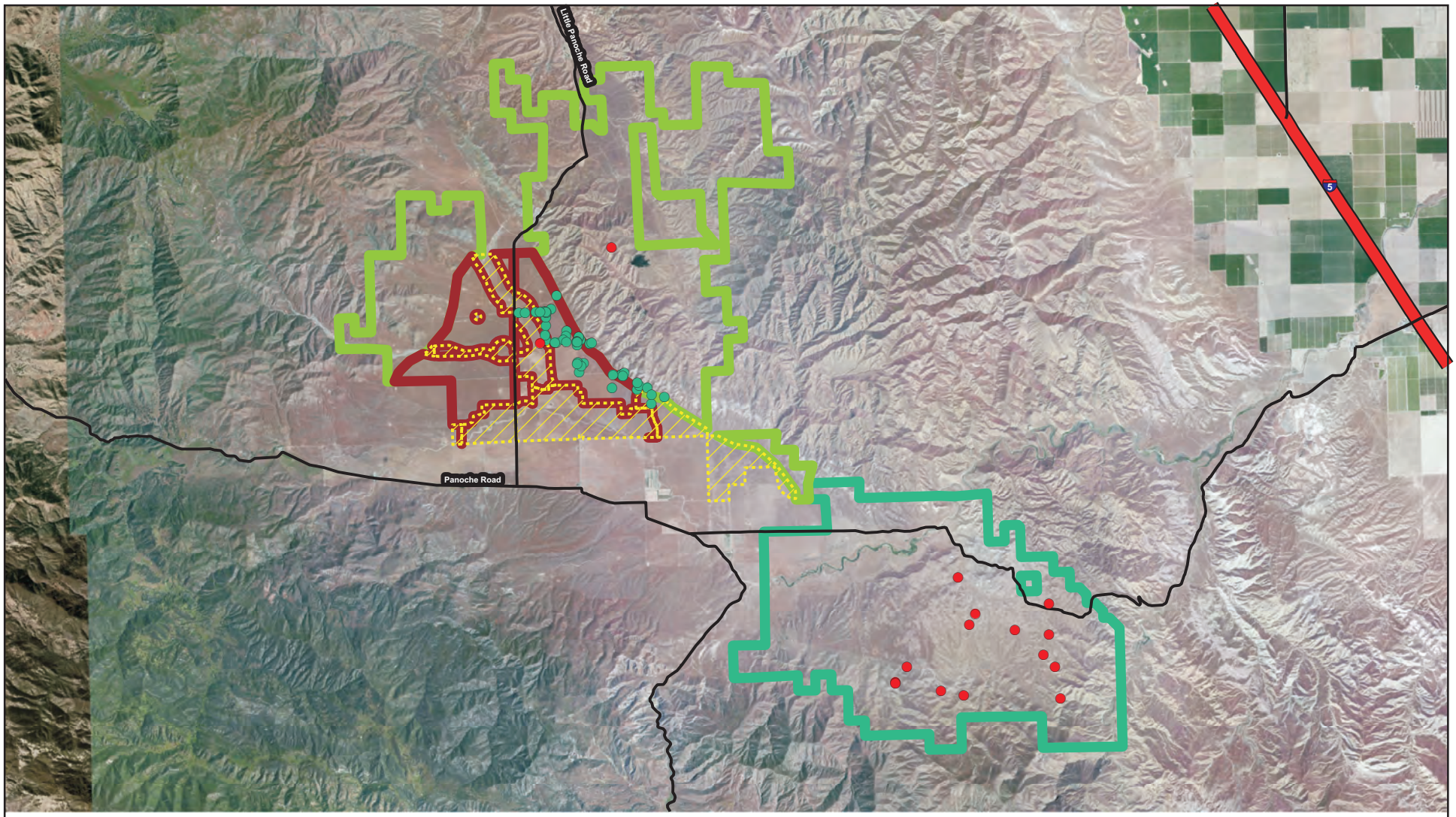
0 1,250 2,500
Feet

Legend

- Project Footprint
- Valley Floor Conservation Lands
- No Data
- No Activity
- GKR Evidence, Active
- GKR Evidence, Inactive
- Relict GKR Sign Present

Figure C.6-4b

2013 Giant Kangaroo Rat Observations
Valley Floor Conservation Lands



Aspen Environmental Group

0 3,500 7,000
Feet

N

Legend

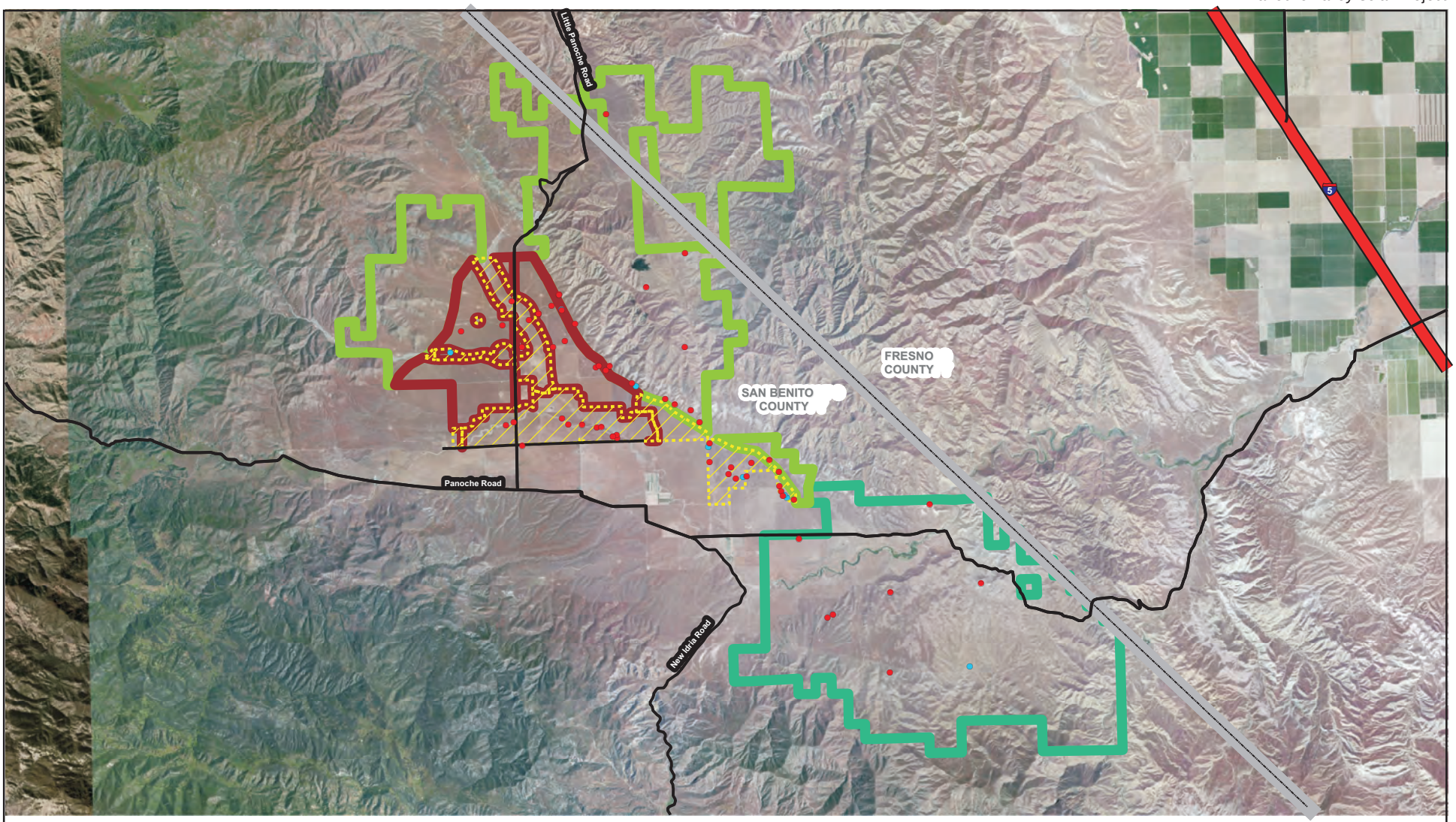
- Project Footprint
- Valley Floor Conservation Lands
- Valadeao Ranch Conservation Lands
- Silver Creek Ranch Conservation Lands

Status

- Observation Location Feb - April
- Observation Location Jun - Sep

Figure C.6-5

2013 San Joaquin Antelope Squirrel Observations



Legend

- Project Footprint
- Valley Floor Conservation Lands
- Valadeao Ranch Conservation Lands
- Silver Creek Ranch Conservation Lands

Status

- Natal/Pupping Den
- Known Den

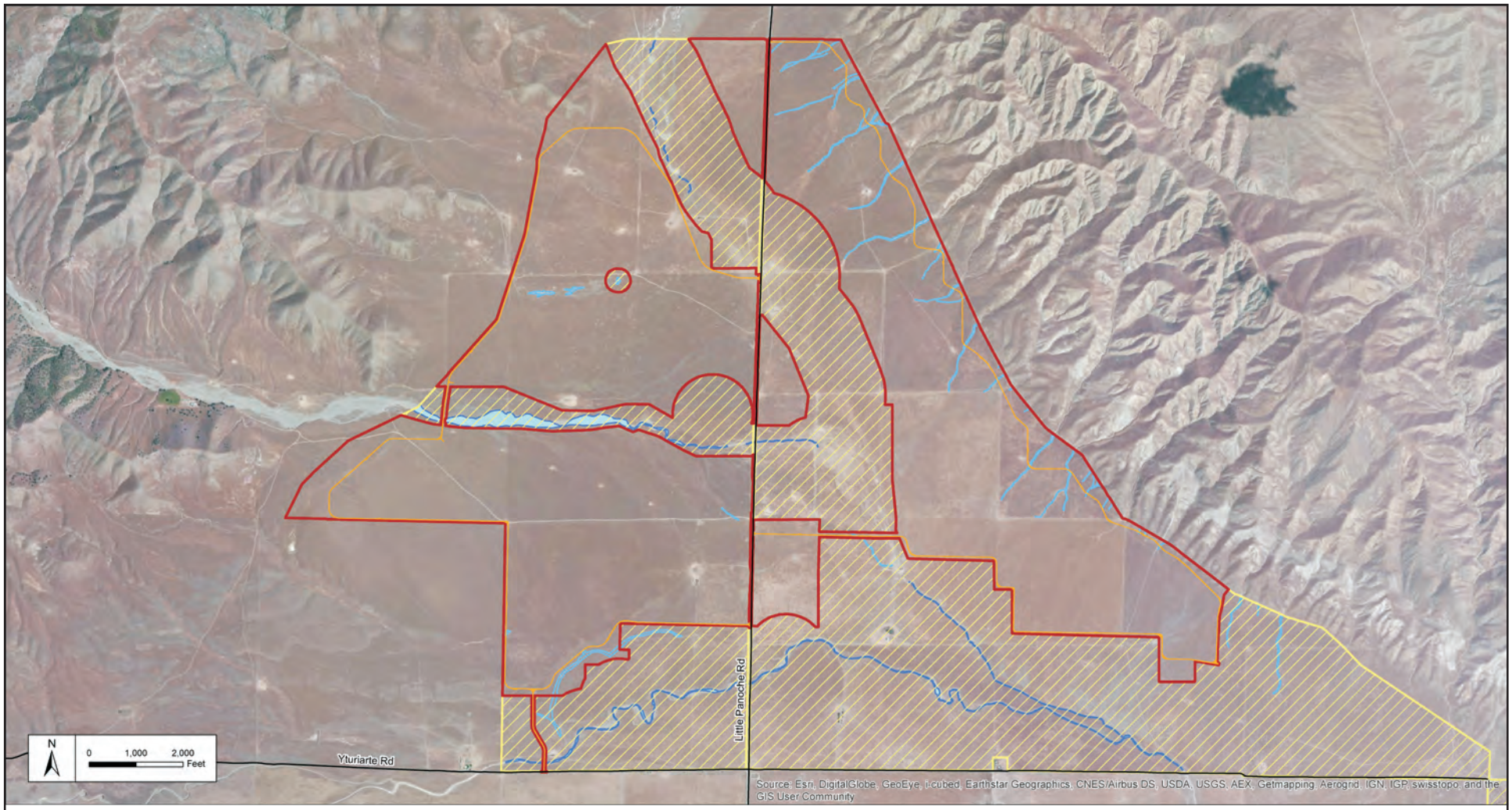
Aspen Environmental Group

N

0 3,500 7,000 Feet

Figure C.6-6

San Joaquin Kit Fox Den Locations



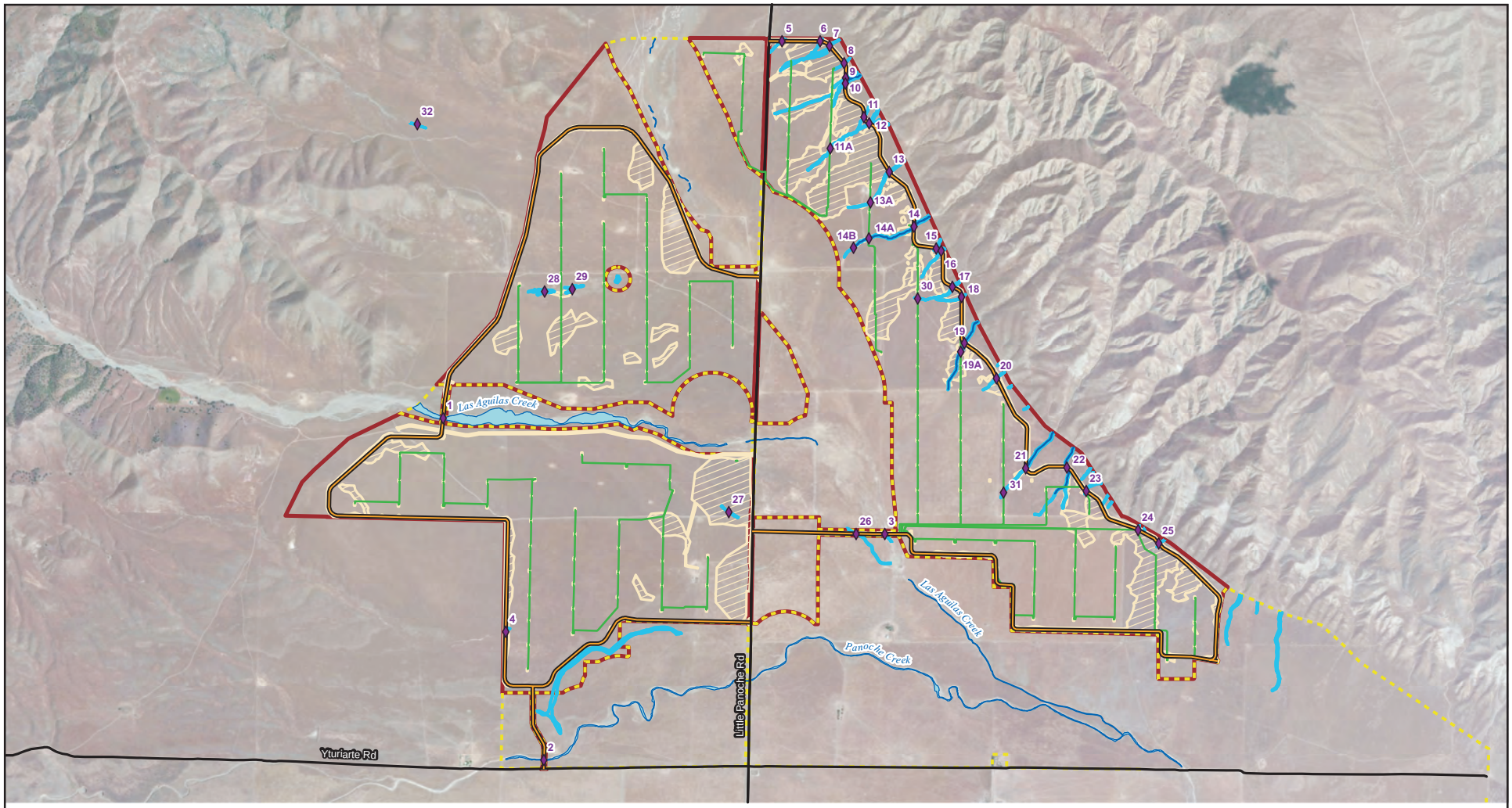
Aspen Environmental Group

Legend

- Project Footprint
- Valley Floor Conservation Lands
- Jurisdictional Water
- Drainage Survey Line
- Project Perimeter Road

Figure C.6-7

Federal and State Waters Overviews



Legend

- Project Footprint
- Valley Floor Conservation Lands
- Grading Area
- Drainage Impact (project)
- Perimeter Road
- AC Block Feeder
- Jurisdictional Drainage
- Drainage Outline
- Jurisdictional Water

Aspen Environmental Group

0 1,000 2,000 Feet

N

Figure C.6-8

Drainage Impacts